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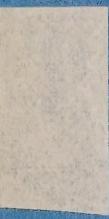
ROYAL GRAIN INQUIRY
COMMISSION

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REPORT

OF THE

ROYAL GRAIN INQUIRY COMMISSION

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1925

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OTTAWA, CANADA, January 7, 1925.

The Hon. THOS. A. Low,
Minister of Trade and Commerce,
Ottawa.

DEAR SIR,—I have the honour to hand you herewith the report of the Royal Grain Inquiry Commission, pursuant to the Order in Council of 1st May, 1923, P.C. 774, a copy of which is attached hereto.

Your obedient servant,

W. F. A. TURGEON,
Chairman.

CERTIFIED COPY of a Report of the Committee of the Privy Council, approved by His Excellency the Governor General on the 1st May, 1923.

The Committee of the Privy Council have had before them a Report, dated 27th April, 1923, from the Minister of Trade and Commerce, submitting that he has had under consideration the present method and system of the handling and marketing of grain, in Canada, and the possibility of improvements therein; and has taken cognizance of the discussions in the House of Commons upon the subject, and has come to the conclusion that it would be to the public advantage that an inquiry be made into the whole matter.

The Minister therefore recommends that under and in pursuance of the provisions of Part 1 of the Inquiries Act, Chapter 104, Revised Statutes of Canada, 1906, a Commission do issue appointing—

Hon. W. F. A. Turgeon, Puisne Judge of Appeal Court, Regina, Sask.
(Chairman);

Professor W. J. Rutherford, B.S.A., Dean of the Faculty of Agriculture,
University of Saskatchewan, Saskatoon, Sask.;

Duncan Alexander McGibbon, Ph.D., Professor of Economics, University
of Alberta, Edmonton, Alberta; and

James Guthrie Scott, Quebec,

Commissioners; and Robert Deachman of Calgary, Secretary, to inquire into and report upon the subject of handling and marketing of grain in Canada, and other questions incident to the buying, selling and transportation of grain; and in particular, but without restricting the generality of the foregoing terms, upon the following matters:—

1. The grading and weighing of grain;
2. The handling of grain in and out by country elevators and from country points;
3. The operation of terminal, public and private elevators;
4. The mixing of grain; and
5. The disposition of screenings.

The Minister further recommends that in addition to the powers in that behalf conferred by the provisions of the said Statute, the said Commissioners be authorized by the Letters Patent of Commission appointing them Commissioners as aforesaid, to engage the services of such accountants, engineers, technical advisers, or other experts, clerks, reporters, and assistants as they deem necessary or advisable, and also the services of counsel to aid and assist them in such inquiry; and to authorize and depute any such accountants, engineers, technical advisers, or other experts, or any other qualified persons, to inquire into any matter within the scope of the Commission, as may be directed by the Commissioners; and that such persons be authorized, in the execution of the powers so deputed or authorized, to exercise the same powers which the Commissioners have to take evidence, issue subpoenas, enforce attendance of witnesses, compel them to give evidence, and otherwise conduct the inquiry.

The Minister further recommends that the said Commissioners be required and directed to report to the Governor in Council the result of their investigations, together with the evidence taken before them, and any recommendations that they may see fit to express thereon.

The Committee concur in the foregoing recommendations and submit the same for approval.

(Sgd.) RODOLPHE BOUDREAU,

Clerk of the Privy Council.

The Honourable

The Minister of Trade and Commerce.

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REPORT OF THE COMMISSION

INTRODUCTION

We have found it our duty in accordance with the commission issued to us by His Excellency the Governor General in Council to devote considerable time to the investigation of a great number of subjects differing widely from each other in character but all of importance as forming part of the subject-matter of the handling, marketing and transportation of grain. Some of the matters investigated have been for years the subject of great controversy among those interested in the marketing of grain either as producers or as traders, and in such cases we have found different practices denounced on the one hand and defended on the other with great vigour, the very existence of certain institutions and of certain forms of business being in fact at stake. In another category of cases we have had to hear evidence and argument on matters in the nature of charges against some of the companies and individuals engaged in the grain trade having to do in some instances with difficulties surrounding the interpretation of parts of the Canada Grain Act and in other instances involving alleged breaches of the clear and uncontested provisions of the law. In addition to these controversial subjects we have had to devote considerable time to the study of matters, which, while not the occasion of dispute, stand out prominently as problems demanding solution in order that difficulties involving financial loss may be removed and the production of grain made more profitable to the farmers of Canada.

Canadian grain producers, grain traders, grain handlers, grain carriers and millers have all been heard and have all evinced the keenest interest in the inquiry; and we feel that we have received from all parties concerned whatever could be adduced by them in the way of argument or information to make our task easier. In the course of our work it became necessary for us to visit several cities in the United States of America and there likewise we received nothing but courtesy and the most painstaking assistance from all those whom we interviewed. Commissioner Rutherford visited the United Kingdom and some continental points and there, he, also, was enabled, thanks to the kindness of those with whom he came in contact, to secure valuable advice and information which have been of great benefit to us all. In view of the thorough manner in which all sources of information have been thrown open to us and all matters of controversy have been subjected to our scrutiny from every angle, we have felt it our duty to make our report as full and as definite as we are capable of making it.

ORIGIN AND NATURE OF THE INQUIRY

Between the year 1897 and the outbreak of the Great War in 1914, thirteen investigations into various departments of the grain trade were held by Royal Commissions, in some cases appointed by federal and in other cases by provincial authority. All of these investigations were prompted by complaints emanating from the producers of grain and they all resulted in the bringing about of at least some beneficial changes in the conditions complained of. As an instance of this we may cite the investigation instituted by the Government of Saskatchewan in the year 1910, which had its origin in the complaints put forth by the farmers of that province in respect to the ownership and opera-

tion of country elevators and which resulted in the enactment by the Legislature of Saskatchewan in the year 1911 of the Act creating the Saskatchewan Co-operative Elevator Company, a piece of legislation which has undoubtedly had a beneficial and far reaching effect upon the whole grain trade of the country. Since the year 1914, however, no general investigation of the grain trade has been held, while the trade itself has expanded and developed with great rapidity owing mainly to the change in world conditions brought about by the war, which eliminated from competition Russia and the Balkan States (who formerly had dominated the world as grain exporters) and increased very considerably the exportation of the Canadian product. In the meantime the complaints of the producers have become more specific and their demands for better conditions more and more insistent and more and more extensive, reaching, as they do now, far beyond the local questions which at one time engaged their attention in each province. From time to time the necessity for an investigation was discussed in Parliament and in the session of 1923 the Speech from the Throne of His Excellency the Governor General announced that a Parliamentary inquiry would be held into agricultural conditions generally, including certain matters affecting the grain trade. This announcement was met in the House of Commons by a general demand for the appointment of a Royal Commission to investigate the trade in all its branches. Later on during the session a Special Committee of the House was appointed and held a number of sittings and as a result that committee submitted the following report to the House on March 14, 1923:—

“The committee appointed to inquire into agricultural conditions beg leave to present the following resolution which was unanimously adopted:—

“That in the opinion of the committee it is advisable and in the interest of agriculture in this country that a full and searching inquiry should be made into all aspects of the grain trade in Canada and that for this purpose a Royal Commission should be appointed, clothed with full powers, not only from the Dominion Government, but from all provinces desiring to co-operate in such inquiry.”

This report was concurred in unanimously by the House and in due course this Commission was appointed by the Dominion Government. The invitation to co-operate which was extended to the provinces interested in the inquiry was accepted by the various Provincial Governments in a manner which left no doubt of their desire to see that a full and complete inquiry should take place and that the views of all concerned should be laid before the commission. The Governments of Ontario, Manitoba, Saskatchewan and Alberta, passed Orders in Council under the various Public Inquiries Acts of these provinces conferring upon the commissioners powers similar to those conferred upon them by the Dominion Government, thus removing any possibility of the work of the commission being impeded by questions affecting the jurisdiction of the federal and the provincial authorities respectively. In addition to this, the Governments of Manitoba, Saskatchewan, Ontario and Alberta, each, at its own expense, appointed counsel who attended the sittings of the commission in each of these provinces respectively as well as at Winnipeg and the head of the lakes. The Government of Ontario appointed the Secretary of the Dominion Millers' Association to accompany the commission on behalf of that province in order to secure evidence and lay before us the views of those interested in the grain trade in Ontario. The Premiers of Saskatchewan and British Columbia appeared before us in person and this latter province appointed counsel to attend our sittings in Vancouver. It is also important to note that the different institutions which may be said to constitute the grain trade, and which, therefore, were under investigation, were represented before us by counsel who co-operated throughout in making the inquiry as thorough and as open as possible. By this means both sides of all controversial subjects were laid before us fully, and a great deal of valuable information, which otherwise it might have been difficult

to secure, was made readily accessible to ourselves and to our counsel. In so far as evidence and argument are concerned the case appears to be complete. Independently of our review of the facts, and of the recommendations embodied in this report, the transcript of the evidence (much of which was given by men who are experts in the grain business or in the treatment of the economic problems involved), together with the carefully prepared memoranda filed on behalf of the producers and of the corporations whose activities and methods were under investigation, will be of great benefit to the Government and to Parliament and to all those who may desire hereafter to study the conditions which surround the grain trade of Canada.

Another advantage which has already been realized by means of the inquiry is that of publicity; the making known of the grain grower's desires and of his grievances and apprehensions; and the answer of the trade, necessitating an open examination of its organization and business conduct. Thanks to the constant co-operation of the newspapers, which from the beginning to the end of our labours devoted much space daily to the publication of the proceedings of the commission, the farming community were able to keep in touch with the various phases of the investigation and to read and weigh for themselves the facts brought out from day to day. The publicity given to the complaints lodged by the producers of grain were likewise made known to all concerned. Where points of controversy are involved, each side has heard the allegations and the explanations of the other. We have reason to believe that this publicity has already resulted in clearing up some of the matters in issue and in removing several of the difficulties which we met in the early part of our inquiry.

Pursuant to what was undoubtedly the desire of Parliament, and to what in any event the necessities of the situation seemed to require, the commission held sittings at various points accessible to grain growers in the provinces of Manitoba, Saskatchewan and Alberta, where the complaints of the producers, their views and their suggestions were heard at first hand. Seven such sittings were held in Alberta, ten in Saskatchewan and seven in Manitoba. It was at these meetings that the points of contention between the producers and those who engage in the buying and selling and handling of grain were first brought out and the way was prepared for the lengthy sessions held later on in Winnipeg and at Fort William and Port Arthur, which occupied nearly the whole of three consecutive months with daily sittings at which the operations of the Winnipeg Grain Exchange, of the elevator companies, the commission merchants and of all other branches of the business known generally as the grain trade were examined with the greatest possible particularity.

As the result of our investigation we have before us numerous demands for changes in the present law and present practices. Most of these demands are of great importance, the magnitude of the grain trade of Canada being now such that any change, even one which might appear trivial in character, is almost certain to affect a great number of people and a great volume of business and consequently to result in the aggregate in the loss or the saving of a large sum of money. Moreover, some of these demands which have been the cause of protracted sittings and of strong debate, are of a most serious character and involve the existence of certain institutions and the continuance of certain practices which loom very large to-day in the grain trade of the country.

Our investigation began with the first public sittings which opened at Edmonton, Alberta, on June 25, 1923, and this report will be handed to the Honourable the Minister of Trade and Commerce, before the close of the calendar year 1924. During the period thus occupied in conducting the inquiry and compiling this report, we have witnessed the occurrence of an event which seems destined to have an important effect upon the whole grain trade and which must

be taken into account by us when dealing with many of the questions which we have been asked to solve. We refer to the creation of the organizations of grain growers known as the Wheat Pools in the provinces of Alberta, Saskatchewan and Manitoba. We will deal more fully with each of these organizations later on, and will point out in what manner their existence and the powers and the privileges which they enjoy may have a bearing upon some of the important matters which demand our consideration.

SCOPE OF THE INQUIRY

The scope of the inquiry can best be defined by citing the terms of the commission conferring powers upon the commissioners. According to these terms, the commissioners were authorized and directed, as follows:—

“To inquire into and to report upon the subject of the handling and marketing of grain in Canada and other questions incident to the buying, selling and transportation of grain; and in particular, but without restricting the generality of the foregoing powers, upon the following matters:—

- “ (1) the grading and weighing of grain;
- “ (2) the handling of grain in and out by country elevators and at country points;
- “ (3) the operation of terminal, public and private elevators;
- “ (4) the mixing of grain; and
- “ (5) the disposition of screenings.”

It will be seen, therefore, that the inquiry was intended to embrace every aspect of the grain trade. The broad language of the commission, unrestricted as it is by the five enumerated clauses, subjected to our investigation all the agencies which buy, sell, store or transport grain, or deal in any other manner with the handling and marketing of this commodity.

During the course of the inquiry suggestions were made to us on several occasions regarding the power of the Parliament of Canada to legislate upon some of the matters under discussion. Several of the subjects thus mentioned are now dealt with in the Canada Grain Act. We think it advisable, although not strictly necessary, to state here, as we have stated before, that this commission has no power to express any opinion upon questions of this sort. In dealing with the law as it is, or in recommending new legislation, we do so quite regardless of such considerations. If any doubts exist as to which legislature has jurisdiction over the subject matter, such doubts must be settled in the usual way. A question of this nature has been before the courts recently in the case of *The King v. Eastern Terminal Elevator Co.*, reported in (1924) Ex. C.R. p. 167.

In treating our subject we shall proceed step by step, dealing with the questions under examination as nearly as possible in the order in which they present themselves from the time the grain leaves the farm for the market until it has reached its ultimate destination.

THE FARMER AND THE COUNTRY ELEVATOR

STREET PRICES

The process of grain marketing begins when the farmer brings his grain to the railway shipping station for sale or for shipment. In some cases he goes to a loading platform where he secures his own car and does his own loading and shipping, thus avoiding the payment of elevator charges. We shall revert later on to the subject of loading platforms. We propose in the first place to give our attention to the problems of the farmer who deals with the country elevator, because these elevators handle the great bulk of the grain grown in Canada, and the relations which exist between their operators and the producers are consequently of greater importance than anything else at this initial stage of the marketing process. The country elevator performs a double function; it is a

warehouse where the farmer may have his grain weighed, stored, cleaned (in some cases), and shipped to market; it is also a grain buyer's plant where the grain is weighed, docked and graded and then taken over by the company who pays cash for it to the farmer.

In approaching a study of the relations between the country elevator and the farmer, we find that many difficulties are complained of, all demanding careful treatment and to all of which we shall give our attention in due course. Amongst these, however, there is one subject which seems to exceed all the others in size and importance, because it affects directly and vitally the largest class of grain growers we have; those who sell their grain outright to the elevator. This subject is that of the "Street" price; this term, "street" price being the distinctive name given in the trade to the price paid by the elevator companies for grain purchased by them, in this manner, from farmers, by the wagon load. Not only do the farmers to whom we now refer compose more than half of the grain growing population, but they also produce more than half of all the grain shipped. Individually they do not produce enough of any one kind of grain to make up a carload, and they find it undesirable or impracticable to combine together by twos or threes to load a car, either on account of the expense of bulkheading or for some other reason. After these farmers have sold their grain to the elevator company, they have no further interest in their product and are freed of all responsibility for it. In making their sales, they, of course, are concerned in securing just treatment in the matter of weights, grades and dockage, and will be affected by whatever recommendations we may make regarding these subjects. Once, however, they have settled these questions with the elevator agent in the course of their transactions, and agreed on the net price, they receive payment in full for their grain, and hand it over to the elevator, whose property it becomes. All direct relationship between the producers and those who market their product ceases with that one transaction at the country elevator. Bearing in mind, then, that over 50 per cent of all our grain is disposed of in this manner by those who produce it, the importance of the question of an adequate street price becomes at once apparent.

We find that those who are engaged in the business of buying and selling grain divide prices into four classes, according to the position of the grain which forms the subject matter of each particular transaction. First we have the "spot" or "cash" price at Fort William, which is ordinarily the highest price, and which represents the amount per bushel obtainable for grain stored in a terminal elevator at the head of the lakes. This price has been for many years, and still is, notwithstanding the great growth in Pacific Coast shipments, the basic price for all Western Canadian grain. It is the price quoted on the Winnipeg Grain Exchange. All other prices are based mainly on the consideration of the distance at which the grain is situated from Fort William and the probable time required to deliver it to that point. (We wish to state here parenthetically, however, that in this matter of time and distance we have found that the existence of an alternative outlet at Vancouver has had a favourable effect on the price of the more Western grain, and more particularly the grain of Alberta. This matter will receive attention elsewhere.) The second class of grain for which a price is mentioned is the grain which has passed inspection at Winnipeg, and is in cars on its way to Fort William. Next we have the "track" price, which is the price obtainable for grain situated in cars at points west of Winnipeg. And the last and lowest price known to the trade is the "street" price, with which we are now dealing, and which is the price at which the country elevator buys grain delivered to it by the wagon load.

Now, it will be found that, so far as price quotations go, and taking the case of No. 1 Northern Wheat as an example, the price of "street" wheat is usually given as between 5 and 6 cents lower than the price of "track" wheat, the freight rate to Fort William being the same in both cases and being, of course,

deducted in both cases. Some misapprehension seems to exist on this point on account of the way the spread is quoted, which would make it appear at first glance that the track seller actually receives a net advantage of 5 cents or 6 cents over the street seller, the cash price at Fort William being the same at the time of both sales. Such, however, is not the case. It will help to a better understanding of the character of the price offered by the country elevator to the owner of a wagon load of wheat if we first compare the latter's position with that of the more fortunate producer who has sufficient grain to fill a car.

It must be remembered, as we have stated above, that once the street seller hands over his grain and receives his price in cash, his interest in the grain and his responsibility for it come to an end. With the track seller, the case is different. Out of the track price quoted to him he must pay a number of items of cost, which do not fall upon the street seller. The carload shipper must pay,—

- (a) elevator handling charges,
- (b) storage charges,
- (c) inspection and weighing charges,
- (d) cleaning charges at terminals (less return for his screenings),
- (e) freight on dockage,
- (f) commission on sale (sometimes deducted in advance from track price quotation),
- (g) interest on advances made to him (if any) prior to actual sale.

He also assumes the risk of the weight and grade of the consignment. When all matters are considered, the apparent advantage of say, six cents to the track seller is found to be reduced very considerably. To illustrate the question, we had certain cases worked out from actual prices paid on 37 different dates taken at hazard during the season of 1923-24. The result showed an actual net gain to the track seller varying from a fraction of a cent to 3 cents per bushel, the average being less than 2 cents per bushel. In the interests of the small farmer, every effort should be made to reduce this margin as much as possible.

Such being the difference between the position of the street seller and that of the track seller, we can now proceed to examine more satisfactorily the position of the country elevator as a buyer.

It is evident in the first place that when the elevator takes over the farmer's grain it accepts responsibility for most of the expenses which, as is shown in the above outline, fall upon the carload shipper; such as the cost of handling, storing, weighing and inspecting. It also assumes the risk of any loss which may occur in grades or weights. In financing its purchases, the elevator company usually uses money borrowed from the banks upon which interest is payable and it is put to some expense in remitting funds to country points to redeem its cash tickets. All these considerations are easy to understand, and, with the exception of the risk of loss in grades and weights, they could no doubt be stated in definite figures if the exact time required to deliver the grain at Fort William could be ascertained at the moment of the sale. The general manager of the Saskatchewan Elevator Company aggregated these charges above referred to at approximately $4\frac{3}{4}$ cents a bushel for the period of one month between the purchase and the delivery at Fort William, the interest and storage charges continuing to increase this figure after that period. But it is this element of time that creates the greatest difficulty when an attempt is made to state in positive terms what the spread ought to be, if one were to assume to fix an absolutely fair street price.

It is the practice of elevator companies to hedge their cash purchases. This means that as the company buys grain from day to day it sells an equivalent quantity for future delivery. In cases where the company's purchases are financed by the banks, as most of them are, the obligation to hedge purchases

is usually made a condition of the loan. Whenever the company delivers a carload of purchased grain at Fort William, it sells it as spot, and buys back its future contract. In selecting the future month for its hedges, the company must therefore estimate its ability to deliver its purchased wheat in carload lots in Fort William in a given time. Then considerations arise as to the amount of purchased grain already in the elevators awaiting shipment, the availability of cars, the limitations placed upon the company by law in the securing of cars, the distance from Fort William, etc. And alongside of all this, there runs the risk of a fluctuation in prices between the time the elevator makes its purchase, and the time of its resale. When the flow of purchased grain is steady, so as to permit of the expeditious loading of cars, and the car supply plentiful and traffic free and uncongested, these risks are reduced to a minimum, and the street price plus freight and the necessary handling costs and other expenses should very nearly approach the spot price (were it not for certain other considerations to which we will refer a little further on). But, of course, conditions at the country elevators are not always perfect in this regard, although, as a rule, they are much better now than they were some years ago.

All these factors must necessarily enter into the fixing of a price of street grain, and none of them can be ignored if the elevator company is to remain on the safe side.

But in addition to being on the safe side, the company must be allowed to figure on a reasonable profit on its cash transactions. In this regard, it is in the same position as any other person who buys a commodity for resale. The element of profit making is a necessary incentive to the carrying on of the business. It has been suggested that the making of profit as such should not be considered by the country elevators, but that, having assured themselves in their price against actual loss, they should take over street grain for the sake of earning the handling charges upon it, deducting the cost of these charges from the prices paid. This reasoning would be forceful if the handling charges allowed by law were fixed so as to assure the elevator a reasonable remuneration for the services rendered. We will proceed in a moment to examine whether or not such is the case.

It is clear, therefore, that, in addition to the deduction made for freight between the country point and Fort William, the price of street grain must be less than that of spot grain by a margin sufficient to insure the elevator company against loss, and to provide it with a reasonable profit on its cash transactions; otherwise, the local cash market would disappear. Two questions, however, remain to be examined. In the first place, we must consider whether anything can be done to improve the conditions which prevail in the shipping of grain from country points so as to lessen the risk of loss and expense which are now charged to the street seller. Secondly, we must consider whether other factors than the legitimate ones of insurance against loss and the provision of a reasonable profit are allowed to enter into the fixing of the street price, so as to decrease it still further; if so, an undesirable condition exists, and the price so depressed can no longer be said to be a fair price.

Turning now our attention to this feature of the case, we are convinced that there is just ground for complaint and that the street seller is in fact called upon to bear more than his fair share of the cost of marketing the crop of Western Canada. In the first place, we believe that he is made to suffer from the present restrictions imposed by law upon the supplying of cars to country elevators. We have a recommendation to make on this subject, which we will state later on.

In the second place, we believe that the street seller is called upon to bear the losses which the country elevators make in the course of their general business. These losses are real and are demonstrated by the scrutiny we have made of the business returns of the country elevators. The evidence shows that

according to the tariff of charges now in force the elevator is compelled to render certain services at less than actual cost. For instance, the Managing-Director of the Saskatchewan Co-operative Elevator Company told us at Regina that in his opinion the handling charge of $1\frac{3}{4}$ cents per bushel allowed the country elevator on stored grain is inadequate, the service rendered under this head entailing a cost of from $2\frac{1}{2}$ cents to 4 cents per bushel. His evidence is corroborated on all sides, and there seems to be no doubt that the present maximum charge fixed by the tariff is inadequate. Again, we find that although the tariff allows the elevator to make a maximum charge of $2\frac{1}{2}$ cents a bushel on special bin grain, the Saskatchewan Co-operative Elevator Company appears to be the only company that charges this full amount, the others rendering the same service for the admittedly inadequate charge of $1\frac{3}{4}$ cents. We are told that this policy is followed by the elevators in order to secure volume and to prevent a great deal of this grain being loaded over the loading platform. But admittedly the net loss is taken off the price of street grain.

We find also that the elevators generally make a loss on the grading of all grain handled by them, whether bought or stored. It has been suggested that they make up this loss by gains on their weights. The question as to whether or not any gain is made on weights by the elevators will be investigated elsewhere in this report, as it forms a different subject of inquiry. We can say at once, however, that there is, in any case, a loss on grades which is taxed upon the street seller.

In short, the position seems to be that the country elevator companies look to their profits on cash purchases to recoup them for all their losses, and to furnish them some profit on the annual business of their houses. The uncontested evidence submitted to us in behalf of the line companies shows that even assuming each country elevator to be operated to its fullest capacity possible, having regard to the number of elevators, the volume of the crop, etc. the earnings, (apart from cash transactions) would still fail to pay operating expenses.

We are forced by all these considerations to the conclusion that the farmer who sells his grain by the wagon load to the country elevator has not been receiving an adequate price for his product. In order to assist this class of producer and to place him in a more equitable position with his more fortunate fellow farmers, we recommend:—

- (1) That the Board of Grain Commissioners for Canada give their attention to a revision of the tariff charges allowed to country elevators, with a view to securing the collection of proper charges from those who make use of the elevator for handling their grain, the object being to remove the injustice of making the wagon load seller recoup the companies for losses incurred by them in handling stored grain;
- (2) That the provisions of the Canada Grain Act regarding the distribution of cars be modified so as to allow country elevators the privilege of securing two cars instead of one in rotation as the law now provides.

We are confident that a freer allotment of cars to the elevator would remove a great deal of the uncertainty which now exists in regard to the time required to deliver purchased grain at Fort William, and would therefore affect street prices favourably. We believe that the modification which we suggest is a very moderate one, when it is remembered that the large class of producers who are interested in the matter make no use of car order privileges themselves, except in the comparatively rare case where two or more of them combine and ship together. It has been suggested to us that any privilege which might be accorded the elevators of securing more cars than is now allowed should be exercised under the control of the Board of Grain Commissioners. There are, no doubt, certain districts in the Western provinces where street sellers are not

numerous, and again conditions may exist from time to time in any district which would call for a temporary reversion to the one car principle. There is, therefore, much to be said in favour of conferring upon the Board of Grain Commissioners a certain degree of control which might enable them, in proper cases, to cancel or suspend the elevator's right to more than one car. But all considered, we believe the general provision of the law should allow two cars instead of one to the country elevator.

(3) An effort should be made to reduce the cost of bulkheading cars in order to make this form of shipment more attractive to farmers with small quantities of grain.

By bulkheading, two or three shippers can combine and secure a car. But complaint is made of the extra cost imposed when the car is bulkheaded. The railways add 1 cent per 100 pounds to the freight charge, irrespective of distance, and the terminal elevators charge \$5 per bulkhead for handling and unloading. The extra freight charge is, of course, under the control of the Board of Railway Commissioners, while the terminal elevator charge is regulated by the Board of Grain Commissioners. At the Winnipeg sittings of this Commission on Thursday, February 28, 1924, the question of the extra railway charge was discussed with Counsel representing the Canadian Pacific railway, and the Canadian National railway. A decision of the Board of Railway Commissioners rendered in the year 1909, approving of this extra \$1 charge was read to us. In our opinion, conditions have changed sufficiently since the date of that judgment to render a reconsideration of the matter advisable. It was agreed at our sittings of February 28 that steps would be taken to have an application made to the Board to review the question. As the complaint on this subject came to us mainly from farmers in the Province of Manitoba, Counsel for the Government of that Province agreed to take the steps necessary to apply to the Board for a hearing. The application has not yet been made, but from correspondence which we have received lately, we understand that the matter will be proceeded with in the near future.

The charge of \$5 per bulkhead for unloading made by the terminal elevator should, we suggest, be reconsidered by the Board of Grain Commissioners with a view to reducing the charge, provided, of course, that this can be done without injustice to the elevator. No charge should be so low as to be inadequate and to compel the rendering of a service at a loss; such a false condition would re-act disadvantageously in some other direction, as experience has already shown in regard to country elevators, but we believe that in order to bring relief to the small farmer and to furnish him with facilities which he may use as an alternative to accepting an inadequate street price, such charges as fall on him alone should be scrutinized with the greatest care and reduced wherever possible.

In making the foregoing recommendations, we are actuated in some measure by the belief that the class of farmers with which we are now dealing is likely to increase as time goes on. Efforts are being made in many parts of the West to induce our grain growing population to take up diversified farming. These efforts have already met with some success, notably in the Province of Manitoba, where the growing number of farmers with small acreages of grain has already intensified the demand for greater facilities in the obtaining of cars upon reasonable terms.

Competition in Street Prices.

Competition among street buyers is of course another element that will tend to increase street prices, and anything that can be done to increase that competition should be encouraged. We have thought it advisable to deal with the subject at some length, and under a separate heading, on account of the

great volume of evidence we have heard on the question as to whether or not reasonable competition exists at country points, and also on account of the widespread interest which the grain producer takes in the controversy. The small grain grower is naturally resentful if he feels that advantage is being taken of his position to purchase his grain at an unreasonably low price, and this resentment is greatly increased when he believes that those with whom he is forced by circumstances to deal have combined to prevent him receiving fair play. It is important, therefore, that no effort be spared to investigate the facts as thoroughly as possible.

The complaint about street prices has been voiced on each occasion upon which the operations of the grain trade have been under inquiry. In the older days, when the line companies occupied the country elevator field alone, or alone save for the existence of a few farmers' elevators at a small number of points, this complaint was probably the most important of those made public from time to time. During the period between 1908 and 1913, the Provincial Governments of Manitoba, Saskatchewan and Alberta took action, each in its own way, to meet the demands of the grain growers, who insisted on government assistance to secure better treatment from the country elevator system. The complaints made then covered much the same ground, in this field, as those that were presented to us; they had to do with grades, weights, dockage, cleaning, special bin facilities, etc., but none was advanced more persistently and universally than that of unfair street prices.

The Government ownership policy adopted by the Government of Manitoba in 1910 and the creation in Saskatchewan of the Saskatchewan Co-operative Elevator Company in 1911, and in Alberta of the Alberta Farmers' Co-operative Elevator Company in 1913 (now merged in the United Grain Growers, Ltd.) all represent efforts made by the Governments and Legislatures of those provinces to secure better treatment for the farmer, and particularly for the wagon-load seller, who is interested in common with all other customers of the elevator in matters of grades, weights and dockage, but who alone has to contend with the hardship of low street prices. Those who assert that prices are too low also assert that they are kept low by the system followed by the elevator companies, which system, they say, sets the price for all buyers and prevents competition. We have dealt with the question of a low price, we shall now examine whether or not there is competition in buying, and whether any organized efforts to prevent competition exist among those engaged in the trade.

We can best begin a study of this topic by dealing with certain price lists issued to elevator buyers at country points throughout the Western Provinces and which serve to guide these buyers in making their purchases. In the Province of Alberta, these lists are supplied by the Western Grain Dealers and Millers' Association of Calgary. In Manitoba and Saskatchewan, the lists used are issued by Dawson Richardson Publications, Ltd. of Winnipeg, on the authority of the price committee of the North West Grain Dealers' Association of that city. Practically all the elevator companies doing business in the prairie provinces excepting the United Grain Growers and the Saskatchewan Co-operative are members of one or the other of these Associations and concur through their committees in setting the prices which these lists contain. These lists show the prices which each company authorizes its agent to pay for street grain, and these prices are the same for all companies operating at a given point, subject, in the case of each company, to special instructions which may go to a buyer from time to time as we shall see later. Wires are sent, usually each day, showing track prices payable, these track prices being variable by fractions of a cent, while changes in street prices always take the form of a whole cent, fractions not being considered. This wire is usually sent to the agent of one company at each point, and he passes on to the other buyers the information which it contains.

The issuing of these lists which set out a common street price for a given date, coupled with the close co-operation among the companies shown by the manner of sending out the telegram announcing changes, is taken by those who allege the existence of a combine in restraint of competition as a proof of their allegation. It is necessary for us, therefore, to examine the nature and effect of these price lists and the conditions which exist at country elevator points in regard to grain buying.

Neither in the case of the Western Grain Dealers and Millers' Association of Calgary nor of the North West Grain Dealers' Association of Winnipeg is there any agreement among the firms concerned to follow the prices fixed in the lists or any rule to compel them to do so. Each firm having membership in one or the other of these Associations is free to follow the list or not, without incurring censure or penalty of any kind. No check is kept by anybody on the firms who receive these lists to ascertain whether or not the prices are adhered to. We have already set out the considerations which actuate the elevator companies in fixing their price for street grain, and shown why in our opinion the prices now prevailing are unfair to the producer. The information contained in the lists may properly be described as a recommendation of the members of the price committee of the Association as to the figure that, having regard to the state of the market from time to time, the elevators may pay for street grain and realize all the advantages which we have already enumerated and which they look to realize from the merchandizing of this commodity. By the arrangement made between the different firms and the Dawson Richardson Publications, this company is furnished with a mailing list of all the elevator buyers employed by each member of the Association. The list is mailed direct to each buyer, and is followed by him in making his purchases, unless he receives special instructions of a different nature from his head office. Each country elevator company is thereby saved the trouble of making up its own prices each day, the work being done for them all by this price committee; each firm, however, retaining its right to depart from the common price whenever it may wish to do so. This method of arriving at a common figure for grain prices by means of a list, or by some other equivalent form of notice to country buyers, has been followed by the grain trade for at least 25 years. It was one of the matters inquired into by Mr. Justice Phippen at Winnipeg in 1907, in the case of *Rex V. Gage*, when he found that this practice did not constitute an infraction of Section 498 of the Criminal Code of Canada, which prohibits combinations in restraint of trade. We cannot find anything which, in our opinion, would differentiate the present practice from the one then followed, and discussed in that judgment.

So much for the list itself. We shall turn now to a consideration of the manner in which it operates. Witnesses on behalf of the country elevators described it as a minimum list. It is a minimum list in this sense, that at points where there are several elevators it would be futile for any one company to offer less for grain than the price contained in the list followed by the others. It is possible to imagine a combination of local grain buyers to disregard the list and pay a lower price, but we have no evidence of any such incident ever having occurred. In fact, there is no evidence of any company ever paying less than list prices for street wheat, although the heads of several companies were examined on this point. We believe, in short, that the list in question can fairly be called a minimum list.

To what extent, then, is this list followed? This brings us back to the main question now under consideration as to whether or not there is competition between buyers at country points. It must be remembered, in the first place, that neither the United Grain Growers Limited nor the Saskatchewan Co-operative Elevator Company makes use of the aforesaid lists supplied from

Calgary and from Winnipeg respectively. These companies fix their own prices, and they form real competition to the line companies at points where they meet. The United Grain Growers have 311 country elevators in the three Western provinces, the Saskatchewan Co-operative Elevator Company have 334 elevators, all in Saskatchewan. These two co-operative farmers' companies have, therefore, 640 country elevators out of a total of 3926, approximately 16 per cent; and they operate at 640 elevator points out of 1,532; which means that they compete with the private elevator companies at 41 per cent of the country points. In so far as the Saskatchewan Co-operative is concerned, we are assured by its officials that they have always shaped their policy so as to secure better treatment for the wagon load seller by forcing up the price of street grain. For this purpose, they have always refrained from paying patronage dividends to their customers, (as has also the United Grain Growers Company) choosing rather to make less profit from their purchases in order to allow the benefit of the higher prices which they set to spread to all the grain growers of Saskatchewan. Again, they charge the full tariff of $2\frac{1}{2}$ cents per bushel for special bin grain, which they say is fully justifiable as a charge in itself, and which increases their revenue from the larger producers quite considerably, when it is noted that their elevators are especially equipped for special binning and that this form of storage comprises usually 50 per cent of the company's entire business. Their general manager told us also that during late years the company has been meeting with keen competition in buying from the line companies. During certain periods of the year, the price committee of the North West Grain Dealers' Association sends out two price lists; the second list, printed on yellow paper, and known as the "yellow list," going to the points where the elevators of the Saskatchewan Co-operative are situated, and containing prices fixed so as to meet the competition forced upon them by that company. There seems to be no doubt that the two co-operative companies have provided real competition in the prices paid for street wheat.

Turning now to these lists which the line companies use, there is no doubt that some competition exists among these companies, notwithstanding these lists. Thus, the figures filed, setting out the operations of all these companies during the year 1922-23, show that 54.4 per cent of all the wheat handled by these companies was bought for cash, and that 21 per cent of this quantity was bought at figures in excess of list prices. Taking at hazard one of these companies with a little over 100 elevators operating in the three provinces, we find that during the same year 60 per cent of its grain was bought on the street, more than half of it at prices in excess of list prices.

In addition to this comparison between the prices in the lists and the prices paid, the evidence shows that the buyers at country points, in order to secure volume for their houses, do compete with each other in the grading which they put on loads. The net result shows that the grading done at country points, and which forms the basis of payment to the farmer, is, on the whole, higher than the official grading at Winnipeg. On the other hand, however, it must be borne in mind, as we have already stated, that this loss in grade is one of the elements that goes to reduce the list price of street grain. The point just now, though, is that this species of competition does take place.

Treating the question from a more general point of view, we have before us, as against the general allegation that there is no competition on account of the lists being in existence, the opinion of some men who have been in a position to observe conditions in the country, and whose sympathies are all with the street seller, to the effect that competition does exist. Thus, at Regina, we received the evidence of the Hon. C. A. Dunning, the present Premier of Saskatchewan, and formerly general manager of the Saskatchewan Co-operative

Elevator Co. Mr. Dunning's observation convinces him that real competition in the buying of street grain exists among elevator buyers at all points where there are several elevators belonging to companies having different ownership, and when the car supply is good. But he believes that where the car supply is poor, and where there is only one elevator, or several elevators owned by companies composed largely of the same shareholders, the printed list is adhered to, and no competition takes place. The Hon. J. A. Maharg, then President of the Saskatchewan Grain Growers' Association, expressed the opinion that competition in prices did exist among country elevator buyers, notwithstanding the uniform price fixed in the lists.

The foregoing covers the case so far as the evidence goes, and we think it is fairly complete. The list price which we have been discussing is set low enough, apparently, to allow a company which is in favourable circumstances as to car supply, quantities of grain already on hand, facilities for securing car loads promptly, etc., to pay more than the list calls for, and still realize in some measure the advantages which, as we have already seen, country elevators expect to derive from the merchandising of grain. We do not wish to be understood, however, as suggesting that competition in buying is altogether as active and sustained as might be desired. *We believe there is still room for improvement.* In addition to the operations of the two farmers' co-operative companies already referred to, we have now a new factor in this field in the wheat pools which have come to the fore recently with a large membership. The operation of these pools is expected by those interested in their establishment to affect beneficially the condition of the farmer who to-day sells his product by the wagon load. The street seller who is a member of a pool receives the initial cash payment, and he enjoys whatever benefit may be derived from the ultimate price. On the other hand, however, the country elevators assume, in that case, the risk of the grade at which the grain is taken in, and this, no doubt, must tend to lessen the competition between buyers in the form of lenient grading, which sometimes takes place at country points.

GRADING, WEIGHING AND CLEANING AT THE COUNTRY ELEVATOR

Those who bring grain to the country elevator, whether to sell or to store, are interested in the manner in which the services of grading, weighing and cleaning are performed. The producer naturally expects honesty and efficiency in these matters. All grain is weighed, and, unless it is placed in a special bin, the agent must also give it a grade and fix the dockage. When the elevator is equipped with a grain cleaner the agent must clean the grain if requested to do so by the owner. We shall deal separately with each of these subjects of grading, weighing and cleaning.

Grading.

The grading done by the elevator agent cannot be perfect so as to correspond in each case with the official grading fixed by the Inspection Department at Winnipeg, or at other points where official grading is done on carloads of grain arriving from the country. By the very nature of the task of fixing a grade on grain there is bound to be a difference of opinion in some cases even between experts. But most country elevator agents are not expert graders in the sense that the official inspectors may be called expert. They have neither the experience nor the necessary means of study and instruction at hand to enable them to qualify as such. We believe that the companies in their own interest take all reasonable steps to instruct their agents in this difficult work, and we have nothing to recommend as an improvement to the present system of selecting and training country elevator agents. These things must be left to the trade.

The facts show beyond dispute that the country elevator companies lose on the grading done at their elevators. The loss is due partly to lack of expert ability on the part of the agents, and partly to the competition for trade which exists at country points. In some cases, the companies instruct their agents to over grade during certain periods. The agents are naturally anxious to secure a good share of the volume of business available, and sometimes the officials of the companies consent to a sacrifice in grade being made in order to increase trade. But this last case is exceptional. The general policy of the companies is to impress upon their agents the importance of grading carefully and accurately. Nevertheless, the losses on grading continue year after year. We have already noted how this loss on grades is one of the factors that go to reduce the price of street grain.

Grading at the elevator includes the drawing of the sample and the setting of the dockage by the agent. In this regard, many complaints have been made. It was pointed out that the operator took his sample from the top of the load and that it included too large a proportion of screenings and light grain. On this sample, the weight per bushel, grade and dockage is set. It is well known that a wagon load of wheat or other grain, that has been hauled a number of miles, will have its contents settled into two layers, with the heavy grain in the lower layer, and the lighter stuff in the top. It was claimed also that the grade was too often set on the uncleansed sample.

In securing a sample, a much better and fairer method would be to catch it from the stream as the grain is pouring from the wagon box to the scale pit, just as is done in the case of a carload at the terminals. The grade on which settlement is made with the seller should be set on such a sample. Both the grading and the setting of dockage on the farmers' grain should be done with the greatest care, and in so far as possible after the methods that are employed by the Inspection Department at Winnipeg. Careless, haphazard methods or guessing as to grade and dockage are certain to create distrust and dissatisfaction. It must be remembered that much grain is teamed to local elevators by boys, old men, women, and often by foreign-speaking people, who do not know the methods that should be employed. The interest of all must be protected, and confidence established and maintained.

Weighing.

While the country elevator companies lose in grades they gain in weights. The statistics of these companies for the last three years (and in the case of one company we have the figures of five years) show a recurrence of this condition year after year. We have found it impossible to reduce the difference to a money value with anything like precision. Taking, however, the case of two large companies, and making use of averages where exact figures are not available we find that the one company appears to have made a gain during the five year period of $\frac{1}{33}$ of a cent per bushel and the other to have suffered a loss during the three year period of $\frac{1}{25}$ of a cent per bushel. Results obtained in this manner can, of course, be only approximate.

In discussing this question of weights we must bear in mind the difference between gross weight and net weight. The gross weight is the weight given to the farmer when his grain is weighed into the elevator, without deduction for dockage; and again, it is the weight placed by official weighing at the terminal upon the grain shipped to the terminals from the elevator, plus the quantity of grain and dockage remaining in the elevator and the screenings removed. The gross weight shipped out of an elevator should never exceed the gross weight taken in. Any gain in this gross weight in favour of the elevator (and the record shows there always is a gain) is due to some defect either deliberate or accidental, in the method of weighing. With net weights

the case is different, because there the shrinkage allowance and the changes in dockage which accompany changes in grade must be taken into consideration. We are dealing now with the question of gross weights at country elevators, that is to say with the treatment which the farmer receives from the elevator in connection with the weighing in of his grain.

When the commission visited country points in Alberta, Saskatchewan and Manitoba during the summer and autumn of 1923 we received many complaints about the weighing by country elevator agents. Instead of weighing wagon loads accurately so as to allow the scales to come to an exact weight, a method was followed which the agents called "taking the break of the beam," an operation which, according to the evidence given by various witnesses, would result in taking 5 to 40 pounds off the true weight of the farmer's load. In the ordinary case, we were told, the quantity abstracted in this manner would be about 15 pounds, but specific instances of a much larger deduction were given. As a matter of fact, expert evidence on the construction and operation of platform scales which we obtained at Moose Jaw shows that the expression "the break of the beam" as used before us, was an incorrect expression. The break of the beam in pounds is, speaking technically, the quantity which it is necessary to place on the platform to cause the beam to rise from a central position in the trig loop to the top, or, conversely, the quantity required to be removed from the platform to cause the beam to fall to the bottom. A platform scale is said to be in good condition when a change in weight either way of not more than $2\frac{1}{2}$ pounds will cause the beam to shift. Technically speaking, therefore, the break of the beam, assuming that the loaded wagon and the empty wagon were both weighed so as to take this margin of weight from the farmer would not yield more than 5 pounds on scales in good condition. But the practice of reading the weight of a wagon load of grain when the beam is in repose at the top of the loop and to read the weight of the unloaded wagon when the beam is at the bottom, can be used to take much more than five pounds from the owner of the grain, and was so used. Some of the agents who gave evidence told us that they aimed to secure 5 to 20 pounds off each load, others said from 10 to 30 pounds, others put it at 10 to 40 pounds, and others finally said that their object was to take $\frac{1}{2}$ of 1 per cent from all grain weighed in. Some agents told us that they took this allowance off the weights even in cases of special bin grain upon which the regulations provided a shrinkage allowance of $\frac{1}{2}$ of 1 per cent.

There is a loss of weight to be expected through shrinkage and waste in storing and handling grain. Up to recently a regulation of the Board of Grain Commissioners allowed the elevator to take not more than $\frac{1}{2}$ of 1 per cent of the gross weight (2 pounds in 5,000 pounds) to protect itself against such loss. In the words of the regulation this allowance was provided for "shrinkage for stored grain," and this language would seem to cover all grain other than bought grain; but it was interpreted to apply to special bin grain only.

We do not find it necessary to discuss further the methods pursued in the past in view of the situation which exists to-day. After we had finished hearing most of the evidence on this question of weighing at country elevators a new regulation was issued by the Board of Grain Commissioners which, we think, disposes of the difficulty, in as satisfactory a manner as can be devised. This regulation is dated November 13, 1923. It repeals the old regulation which allowed one-half of 1 per cent shrinkage of special bin grain only, and provides instead for a deduction on the gross weight of all grain; cash, special bin and stored to grade grain. This deduction is to be made in pounds according to a table which is required to be posted in a conspicuous place in all country elevators. The deduction allowed is based on the number of bushels in a load as well as the weight. In the case of wheat, flax and rye the shrinkage allowance runs

from 5 pounds on a minimum weight of 1,400 pounds in 25 bushels or less to 45 pounds on a minimum weight of 8,848 pounds on 158 bushels. In oats the allowance was from 5 pounds on a minimum weight of 850 pounds to 26 pounds on 5,372 pounds. In barley the scale goes from 5 pounds on a minimum weight of 1,200 pounds to 36 pounds on 7,548 pounds.

Where the elevators deal with grain as warehousemen so as to be accountable to the owners for the quantity taken in, there can be no question as to the propriety of allowing for the loss in volume which is bound to occur through shrinkage and the waste which attends handling and shipping. It is, of course, impossible to fix an allowance in pounds which will fit in accurately in every case, year after year. The Board, we think, were well advised to begin tentatively with the table based on the experience they have had from the result in the past of making allowance of $\frac{1}{2}$ of 1 per cent on special bin grain. The result of the new experiment can be checked and the necessary modifications made later if the allowance now provided should turn out to be inadequate or excessive. The evidence shows that the new shrinkage regulation did not come into general use during the season of 1923-24 on account of the late date at which it was issued (November 13), the elevator companies being very busy at that period and some time, of course, being required to have the regulation with the necessary accompanying instructions reach all country agents. For this reason we were unable to secure information as to actual results last season.

Some question has arisen, however, over the action of the Board in applying the shrinkage regulation to cash grain, that is, to grain purchased outright by the elevator. In the past the loss through shrinkage and waste has been one of the more or less definite factors going to increase the spread in price between cash and spot grain. There is doubtless a certain anomaly in allowing a purchaser to take a trifle more than he is paying for in order to insure himself against loss by waste and shrinkage. The more natural course would be to allow him to take this probability of loss into consideration in fixing the price he is prepared to pay, as he has done heretofore. But in the grain trade the weight of expediency is altogether the other way. We are convinced from our own experience that it will be more satisfactory both to the farmer and to the purchaser to see a rule adopted which should ensure accuracy in weights while providing reasonably for a probable loss due to the character of the merchandise handled.

The question of accuracy in weights is, after all, the important question. We have seen how, in the past, accurate weights were not given, the "break of the beam" system being used to deduct some pounds from the actual weight. Whatever may have been said in the past in defence of this method, no excuse can be urged for it from now on, the Board having furnished a plan to protect the buyer and the warehouseman. The Act contains provisions (Sections 158 (2), 175, 240, etc.) intended to ensure proper weighing and the giving of just and accurate weights. We know that some companies have already notified their agents that henceforth, in view of the new regulation, they are to take the time necessary to weigh exactly and accurately. Every means should be taken to see that the spirit of the regulation and of the Act is observed scrupulously.

On several occasions during the course of our inquiry it was suggested to us that an official weighing system should be instituted at all country elevator points in the form of government or municipal scales and official weighmasters. We have considered this suggestion, but cannot recommend its adoption. Such a system could only be established and conducted at great expense, and in its operation it could not hope to be perfectly satisfactory. In a large number of towns there are scales, owned either by the Municipality or by some firm, which can be and are used by the farmers as a means of confirming and checking weights received at the elevators. Used in this manner these scales perform a

good service. But it does not follow from this that it would be advisable to incur the expense of establishing official scales at all points to fix the weights of grain and of wagons to be accepted by all elevators, even those at a distance from the scales. Too many difficulties would have to be overcome to make such a system perfect, and unless it was perfect, or nearly so, there would still be room for dissatisfaction. Elevator scales are now inspected officially, usually once a year. This inspection should be more frequent if possible, and the Board of Grain Commissioners should insist rigidly that all weights be taken on an even beam. We found the dissatisfaction over weighing very widespread and it is important that all reasonable measures be taken to remove it.

Apart from the inaccuracies we have referred to in the actual weighing, we had evidence at a few points of another practice followed by some elevator agents which is most unjustifiable. This practice consisted in accounting to the farmer for the even bushels, only, found in his load, keeping the odd pounds for the benefit of the elevator; and this margin was taken, in the cases cited to us, in addition to the deduction already made by the inaccurate weighing. We do not think this practice prevailed to a sufficient extent to be imputed to the trade generally but it was done by some agents and we refer to it as one of the things that must be stopped. Hereafter there will be no excuse whatever for any practice in contravention of the regulation which requires the taking of the exact weight less the authorized shrinkage allowance.

Cleaning.

The subject of cleaning grain in country elevators forms part of the more general topic of cleaning and the disposition of screenings, which is dealt with at length later on in this report.

STATUS OF COUNTRY ELEVATOR AGENTS

Before leaving this subject of weighing at country elevators, we find it necessary to deal with certain questions arising out of the relationship between the companies and their country agents. An organization known as the Order of Grain Buyers brought charges against certain of the companies which were heard during a five days session at Moose Jaw. These particular charges were brought in order to illustrate practices which, the officials of the organization alleged, were carried on by country elevators in dealing with their agents, and, through them, with the public. As these charges had been in circulation for some considerable time, in the form of general statements against the country elevator business, no pains were spared to secure all the evidence to substantiate them which could possibly be obtained. We deal with them at this point, because the question of weights enters into all of them, as will appear. The evidence adduced was directed to establish,—

- (1) that the contractual relations between the companies are such that the agent is placed in a position of hardship by being made responsible to the company for losses in the handling of grain which do not arise through his negligence or his dishonesty;
- (2) that in some cases false claims of grain shortages are made against the agent by the company in order to extort money from him;
- (3) that in consequence of the situation thus created, the agent is under constant temptation to make himself secure at the expense of the farmer, particularly by giving false weights;
- (4) that in some cases he is actually instructed by officials of the company to defraud the farmer in this matter of weights;
- (5) that a system of "blacklisting" exists whereby an agent who does not comply with the unreasonable and (in some cases) improper requirements of the company is discharged and finds himself unable to secure employment in another company.

The charges produced at Moose Jaw were 23 in number, and affected 14 country elevator companies. To these 23 charges we must add a charge of similar character against another company which was aired later on at Winnipeg. Of these 15 companies, 4 no longer exist. There are now 72 companies doing business in the western provinces. There are, therefore, 61 of these 72 companies against whom, individually, no complaint was laid. The first complaint arising out of the relationship between the elevator company and its country agent, had its origin in the state of affairs which existed prior to the autumn of 1920. In the usual case during that time (and the same is still true to-day), the contract between the company and the agent was a simple contract of hiring without any special terms. The effect of it, therefore, would be that the agent agreed for a stated monthly salary to attend to the buying, storing and shipping of grain at the elevator, and to handle the company's grain and sometimes its money and other goods, such as coal; and to do all this honestly, diligently and to the best of his ability. But the agent seeking employment was obliged to obtain a bond to protect the company from loss, and this bond was furnished usually by a guarantee company. Most of the elevator companies required a bond which went much further than to protect them from losses occasioned by the negligence or dishonesty of their agents. By this bond, which was known in the trade as the "shortage" bond, the guarantee company insured the elevator company against all losses in weights, except in certain specified cases. The agent, in turn, agreed to indemnify the guarantee company against any payments it might make under the bond, and to accept the mere fact of such a payment having been made by the guarantors as conclusive evidence of his own liability to them. By this arrangement, the agent was always in danger of being held liable, and in some cases was actually held liable, for losses which were not due to his own dishonesty or his own negligence. All country elevator companies did not use this "shortage" bond, but most of them did. Among the cases we heard at Moose Jaw, we found some where, although the guarantee company paid claims arising without negligence or dishonesty, no attempt was made to collect from the agent, and other such cases where such an attempt was made and then abandoned. We do not think, however, that the evidence in any case went so far as to show that any company actually pretended falsely to have a shortage when none existed, as was alleged, in order to extort money from the agent. But, on the other hand, we had two cases of undoubted hardship where the elevator companies took advantage of the existence of the bond to collect losses direct from the agents, where, according to the evidence given before us, the losses had occurred through no act of omission of theirs and they paid the claim in order, as they were made to believe, to avoid trouble with the bond company. One of these cases took place in 1918, and the amount paid by the agent was \$681.85. Since this incident occurred, the company in question has been re-organized, and after the facts were made public at Moose Jaw, the present officials of the company refunded the money to the agent. The other case took place in 1920, and the amount paid by the agent was \$400. But the company which took this money no longer exists, and there does not appear to be anybody from whom redress can now be obtained. In both these cases, the bond company was not brought into the matter at all, and is in no way responsible for what occurred. It goes without saying that in addition to any injustice which might be suffered by the agents themselves, as happened in these two cases, it was a menace to the grain producers to have men, working under the pressure of such conditions, employed in the handling of grain. The temptation to make good, and to secure themselves at the farmers' expense by cheating him in his weights certainly existed. Altogether we are of the opinion that this shortage bond practice was wrong in principle, and although the great majority of the companies may never have taken an unfair advantage of it,

it lent itself to wrong doing, and we are pleased to know it is no longer in use. In the autumn of 1921, the Board of Grain Commissioners issued a regulation providing for the cancellation of the license of any country elevator company whose agent was subject to such a bond. There can be no objection, of course, to an elevator insuring itself against all losses, however arising, but to use such an insurance to make the country agent the ultimate insurer was a vicious practice, and we are glad to see that the Board has done all it could to abolish it.

Coming now to the allegation that the country elevator agents have been solicited and invited, either directly or indirectly, to steal from the farmers by giving false weights, we must say that no such charge can be sustained in such a manner as to be a reflection on the grain trade. We are not considering now the instruction which may have gone to agents to allow for shrinkage and waste in fixing weights, as we have already dealt with that question and shown how the difficulties that existed have been met by a new regulation of the Board of Grain Commissioners. We are dealing here with an allegation of deliberate attempts to take grain from the farmers without excuse or colour of right. Considered regardless of morality and from a purely business point of view, it is hard to believe that the grain companies would systematically make thieves out of men who have the handling of their money and their goods. It would be a sure way to make trouble for themselves. It is impossible to imagine bonding companies doing business with elevator companies in the free manner they do, if they suspected such a practice to exist. But, apart from these general considerations, the evidence which we have is sufficient to convince us that any case of this sort which took place was exceptional. The cases which establish guilt, or which even create a reasonable doubt, are very few when we consider the time and care taken to secure evidence and the number of years we turned back in order to allow it in. In one case, we were shown a contract executed on September 10, 1918, between an elevator company and a country agent, whereby the company agreed to pay the agent \$150 per month salary and to allow him in addition 10 per cent of any overage he might have on hand in his elevator at the end of the season. In our opinion this agreement was intended to produce illegal profits for the company and for the agent by defrauding the farmer. The company in question no longer exists and we are informed that several of its officials were convicted of theft some years ago. In another case which happened in 1920 we find certain letters from the manager of a company to a country agent who was said to be short in his grain wherein the agent is urged to "get busy and make an overage while there is still time to do so." The company concerned is a small company with eight elevators. The manager who wrote the letter is no longer in the company's employ. Both of these cases were clear enough to require no comment and they are certainly bad cases. They illustrate the possibilities of fraud which exist in the country elevator business when those who engage in it are dishonest. But it takes sheer dishonesty to produce cases such as these and we have no evidence that the great majority of those engaged in the trade, whether as company's officers or as country agents, are more dishonest than the ordinary run of men. In view, however, of the possibilities of fraud which exist, no pains should be spared to remove temptation from the country agent and to ensure proper supervision of the operations of the companies.

The above cases were the only ones where proof of a guilty intention was brought home to the officials of a company. We had several other cases where there was a conflict of evidence on the question of knowledge by officials of irregularities occurring at country points, but under the circumstances we do not feel justified in holding the company responsible.

One of these cases, however, dealt with a matter which we think requires special notice. We think it will be best to deal with it here, although this may

be somewhat of a digression from our main topic. It relates to the condition of elevator scales at country points.

In the case in question a former agent of one of the companies told us that in the year 1921 he tampered with his elevator scales by filing a notch in the shoulder of the beam behind the zero mark in such a manner that the poise could be pushed back of this zero mark and thus cause the scales to register false weights, and that he used the scales falsely adjusted in this manner during part of the season. He alleged that he performed this manipulation on the instructions of the travelling superintendent of the company. This superintendent gave evidence denying the allegation in so far as he was concerned and disclaiming all knowledge of the illegal filing. It also appeared that this superintendent had dismissed this agent from the company's services on the grounds of incompetence and carelessness. Giving due weight to all the evidence adduced in this case, and which it is unnecessary for our purposes to review here, we cannot hold the superintendent guilty personally of the charge made against him, but the scales were, in fact, found to have been tampered with in the manner described by the agent. The company has since removed this damaged scale beam and put in a new one. Under the rulings which have been given so far on this question, the mere having for use in one's possession of scales in this condition, even without knowledge, is an offence under the provisions of the Weights and Measures Act, rendering the defective beam liable to seizure and the owner to the penalty of a fine. This means that it is the duty of those who deal with the public in the buying and selling of merchandise to make sure that they have not in their possession and use scales which have been falsified. We reported this case to the Department of Trade and Commerce, recommending that it be followed up and that steps be taken by inspection to ascertain, to what extent, if at all, the practice of tampering with elevator scales was being carried on. We were informed that upon several occasions in the past beams containing a false zero notch, such as the one described in the case heard by us, had been seized by Inspectors of the Weights and Measures Branch, Department of Trade and Commerce. Upon receiving the report of the case brought before us at Moose Jaw in August, 1923, the Department took immediate action to discover what elevator scales showed signs of having been manipulated and twelve seizures and prosecutions have since taken place. In each of the cases the tampering was of the same nature as that described at Moose Jaw. A notch had been filed in the beam behind the zero notch so as to provide for the registering of an incorrect weight, the difference thus created in favour of the buyer ranging, in these eleven cases, all the way from 30 to 100 pounds. The wagon load is first weighed correctly, the poise being set at zero and a true weight given. Then after the grain is unloaded the poise is slipped back to the false notch and the extra weight thus created is added to the weight of the empty wagon, thus increasing the deduction to be made from the gross to give the farmer the net weight of his grain. In eleven of the twelve cases convictions were secured. In all these cases, however, nothing further was proved than that the companies had possession of the scales and were using them. In each case the agents denied having used the false notch on any occasion. Some of them stated that they were unaware of the existence of the notch until it was pointed out to them by the inspector. Others said they had found it on the beam when they took charge of the house. The superintendents of the companies likewise disclaimed all guilty knowledge of the condition of the scales. In some cases the company in possession had taken over the elevator only recently from a company now out of business, and the false notch might have been there prior to the change of ownership. Again, the manipulation might have been the work of a guilty agent making a profit for his own purposes. Many explanations of course are possible besides that of guilt attributable to the company itself. It

is worthy of note that these twelve cases affect ten different companies, one company being found to have two such scales in its possession, the others only one each. This would appear to indicate that in no case was it the intention of a company or a superior official of a company to practice this falsification systematically. Whatever the cause may be, the fact remains that the evil has existed, and must be eradicated. It is worth while in the interest of all concerned, to go to considerable trouble and expense in order that the apprehension of unfair treatment be removed from the mind of the farmer. Constant and increased activity in the inspection of elevator scales and the prosecution of offenders in each case, will, in time, produce this result.

We venture to suggest, for the better enforcement of the Weights and Measures Act in respect to elevator scales, that the Royal Canadian Mounted Police be specially instructed to look out for violations of the law in country elevators. With approximately 4,000 country elevators in the prairie provinces, it is, of course, quite impossible for the regular inspectors of Weights and Measures to keep in close touch with the situation in these houses. The police, on the other hand, could, we think, keep things well in hand. The mere knowledge that this well known police body is actively engaged in looking out for breaches of the law would no doubt prove a great deterrent to would be offenders and would also have the effect of giving confidence to those who are interested in receiving fair treatment at the elevators.

The last complaint put forth at Moose Jaw was that a system of "blacklisting" existed which operates to the prejudice of honest and efficient grain buyers. The evidence does not show that such is the case. The North West Grain Dealers' Association of Winnipeg, by means of its inspection bureau, keep a record of all country elevator operators, intended for the confidential use of the members of the association, setting out the antecedents and character for honesty and ability of each man engaged as a buyer. When a buyer leaves the employ of a company the company reports the reason for the termination of the employment. By means of this record, a company having before it an application for employment can ascertain whether the applicant has been employed previously by a country elevator company, and if so, whether his antecedents or personal habits were such that it would be unsafe to employ him. It is natural that companies who engage men to handle their money and their goods, and goods for which they are responsible to others, should co-operate to keep each other informed of facts which are essential to the safety of the relationship into which they must enter with their agents. In addition to the companies who are members of the association, the Saskatchewan Co-operative Elevator Company and the United Grain Growers Limited take advantage of the records compiled by the Inspection Bureau and co-operate in supplying information to the bureau. In view of the great number of companies and of agents employed and the frequent changes of agents which are made, it is really difficult to see how the work of such an inspection bureau could be dispensed with without creating confusion, misunderstanding and delay. No agreement exists among the companies not to employ anybody who may be the subject of an unfavourable report, much less is there any evidence of an agreement to refuse employment to anybody who may incur a company's disfavour, which would be the real meaning of blacklisting, in the sense in which the term is ordinarily employed. No fault therefore, can be found with this system in itself. On the other hand, of course, those men whose names and records are kept on this list have an undoubted right to fair and honest treatment. The law already provides sufficient redress for any individual who may suffer an injustice. Of course we find that where a company did compel or attempt to compel an agent to make good a claim for shortage which was not due to his incapacity or his neglect or his dishonesty—and we have referred to cases of this sort which came to our

intention—they gave him at the same time a reputation for unsatisfactory service, which made it difficult for him to secure employment from other companies. This was wrong and was part and parcel of the system which we have condemned. But we have already shown that the cases of this kind which we heard cannot be considered as a reproach to the trade as a whole and similarly they do not establish the existence of what might be called a system of black-listing.

We now revert to the main question involved, namely, the relationship between the elevator companies and their country agents. The companies have, of course, and must continue to have, the free choice of their employees and must be expected to satisfy themselves as to their ability and integrity. It is important, however, that the situation surrounding this employment be such that an honest and diligent agent need have no fear that he may be held personally liable for losses to the company which do not arise through his act or omission. This is important on account of the dual position which the elevator agent occupies. He stands between the company and the grain grower. The company entrusts to his care its documents of liability, sometimes its cash, its goods, and the goods of other people to whom it is accountable. The grain grower depends on him for honest treatment, particularly in this matter of the weighing of his grain. There are nearly four thousand elevator agents in the Western Provinces. All grain which does not go over the loading platform is handled by them. The part which these men fill in the grain marketing system is therefore important. Past experience has shown that there have been dishonest men among them, which, of course, is only to be expected in all human affairs. The best that can be hoped for in the way of legislation or regulation is to provide a condition of employment in which an honest man need never feel insecure or tempted to take from the farmer in order to protect himself against unfair claims.

It is the agent's duty to serve the company to the best of his ability, to take proper care of the property entrusted to him, to carry out the lawful orders which he receives from his superior officers, and generally to exercise reasonable care and skill in the performance of his work. If he is guilty of negligence in any of these things he is liable to his employers for whatever losses may result. It also goes without saying that he is liable for losses which may occur through his dishonesty. But he is not liable for losses which happen through mere accident or through circumstances beyond his control: and this last principle is the important one before us. Any legitimate grievance that we have heard on the part of agents arose from the fact that it had been disregarded. In prohibiting the use of the shortage bond the Board of Grain Commissioners intended no doubt, to put an end to this abuse.

When an effort is made to attach liability to an agent for the occurrence of a loss the onus of proof is on the claimant. He must show that the loss occurred through the fault of the agent. On this point, however, it must be remembered that the agent is in charge of the building, keeps the accounts, has the custody of the books, of the tickets and of the grain; and attends to all the weighing in and shipping out of grain. He has therefore an intimate personal knowledge of the business of the elevator and is able to explain readily many things which an outsider or a casual inspector might have difficulty in clearing up. In view of the nature of his position it is part of his duty in the case of a loss, to assist his employers to trace its origin by placing at their disposal all the information which he possesses and by explaining when an explanation will be of service. He should not hold back and allow his employers to shift for themselves in difficulties which he can assist materially in removing. We mention this last matter because we have found in a few cases a tendency on the part of the agent to take this attitude.

The shortage bond having been abolished (and it must be remembered that some companies never did make use of it), the relationship between the elevator company and the agent would be as above outlined in the absence of any special contract containing exceptional provisions. Usually there is no such special contract except such as may arise indirectly through the bond. The form of bond now in use and which has been found satisfactory to the Board of Grain Commissioners, is known as the "one act" bond. By the terms of this Bond the surety is liable only for losses which occur through the fraudulent or dishonest conduct of the agent. Once the elevator company has established the fact that some portion of the loss has occurred in this manner (hence, the expression, "one act") the onus of the proof is lifted and the surety must pay the whole of the loss except such portion thereof, as it, in its turn, may be able to show did not occur through the agent's fraud or dishonesty. The agent in his application for a bond agrees beforehand that he will indemnify the surety for any loss it may be called upon to pay under the bond and that payment by surety shall be conclusive evidence of his liability. So far as we know this last provision is to be found in all bond applications and its use in the grain bonding business is neither new nor exceptional. The "one act" provision however, does appear to be a novelty. In most businesses, once a dishonest shortage is discovered, it becomes merely a question of auditing to ascertain the size of the shortage, evidence of dishonesty running visibly all through the case. In the handling of grain in and out of country elevators the case is not so simple, as there are many ways in which grain may be lost apart from the dishonesty or even the negligence of the agent, and, it may be impossible, particularly where the agent keeps silent, to distinguish between losses which have their origin in fraud and those which occur through accident or mere negligence. It would appear then, that the elevator companies have reached a compromise basis:—no liability without fraud, and then full liability except in so far as the connection between the fraud and the loss is disproved by the surety.

It is still possible, of course, to imagine cases where an injustice may be done the agent, but the same is true of every bond where the employee binds himself in advance to accept payment by the surety as proof of his own liability. There seems to be a fear that some loan companies, in order to retain business or through some other improper motive, may be induced to pay claims on insufficient proof of dishonesty where they know they can recover with little difficulty from the agent. In practice however, we believe that there is really very little to apprehend on this score. The gist of the contract is that the agent is to be liable under the bond for losses arising through his fraudulent misconduct only. The power given to the surety, by paying, to put the agent in the position of being liable for a loss supposed to be caused by his dishonesty, is one that will have to be exercised in the utmost good faith in order that the letter of the bond may be asserted by the surety against the agent.

In any event we do not believe it is possible to enact any statutory provision that will always and in all conceivable cases prevent wrongs occurring. We believe that a system of control and supervision exercised by a competent body will be much more likely to promote satisfactory results. The Board of Grain Commissioners have already intervened in the question by their regulation of August, 1920, prohibiting the use of the shortage bond. We believe that their jurisdiction over all matters pertaining to the relationship between the elevator companies and their agents should be confirmed, if necessary, and extended. To meet difficulties which may arise in the future, it should be provided by law that bonds for the integrity and fidelity of country elevator agents may be issued by such companies only as are empowered to do so by

the Board. The Board, under this system would issue from time to time a list of those companies which have obtained its approval. The Board's approval could be withdrawn at any time in the case of a company which failed to comply with its regulations or which, in its opinion, had misused its position to deal unjustly with an employee. By this arrangement employees who believe they have a grievance would have a tribunal of easy access which could readily detect the existence of an improper practice and check it in a most effectual manner.

STORING IN SPECIAL BIN AND SUBJECT TO GRADE AND DOCKAGE

Under the provisions of the Canada Grain Act and the regulations of the Board of Grain Commissioners there are four ways in which a farmer may dispose of his grain. He may (1) sell outright to the elevator, accepting settlement according to the grade and dockage fixed by the elevator agent; (2) he may store in the general bins of the elevator, again in that case accepting the agent's grade and dockage; (3) he may, by agreement with the elevator agent, have his grain placed in special bin separate and apart from all other grain, in which case the elevator becomes responsible only for the weight and identity of the grain, and for insuring it against loss by fire; or, (4) he may either sell as in (1) or store in the general bin as in (2), above, but without accepting the elevator agent's grade and dockage as final; whereupon a sample of the grain is sent to the Chief Inspector and final settlement is made according to the decision of that official as to the grade and dockage.

The first two cases do not present special difficulty. In the case of grain received into general storage there are certain ambiguities and inconsistencies in the sections of the Act, the forms of receipt used and the regulations of the Board, when all three are taken together, but the general intention seems fairly clear. We do not believe it advisable to take time now to deal with these matters with more particularity. A careful re-draft of these provisions will suffice, we think, to bring the law into conformity with the practice, and to make the necessary modifications to meet new conditions. The third and fourth cases mentioned above, known respectively as "special binning" and storing "subject to grade and dockage", call for more extended notice here.

Storage in special bins is provided for in section 167 of the Act. The furnishing of special bin service is not made compulsory on the elevator company. In most cases the elevators are unable to supply this service on a large scale, as it would make too great a demand on their storage space. Each case of special binning occurs by agreement between the owner of the grain and the operator of the elevator. In this case, the operator takes the grain into the house, places it in a special bin and issues to the owner a receipt in form "C" in the Act. By this receipt form the elevator company undertakes to insure the grain against loss by fire and guarantees its weight and the preservation of its identity. The Company also agrees, on return of the receipt and payment of all charges, to deliver the identical grain to the order of the owner at the elevator or in carload lots at a terminal. The grain is not graded by the operator. A sample of the grain is drawn and placed in a receptacle provided by the operator. This is done in the presence of the owner. The receptacle is then locked with a padlock supplied by the owner, who keeps the key. The sample is then preserved by the operator until the grain has received official inspection. If as a result of this inspection the owner believes that the identity of his grain has not been preserved, he and the operator forward the sample to the Chief Inspector to be compared by him with the official sample of the shipment. This will determine finally the question as to whether or not the identity of the owner's grain has been preserved.

The storing of grain subject to the inspector's grade and dockage is provided for in Section 172. The intention of this section is to cover cases where the

owner is not satisfied with the grade or dockage offered by the operator. This may happen in the case of a sale or in the case of grain delivered for general storage. It is the duty of the operator to issue a ticket, as in the ordinary case, giving the weight of the grain and the grade set by him. The company guarantees the weight and the grade so set. The operator must however, mark the ticket "subject to inspector's grade and dockage." In the case of a sale the owner is paid at once on the basis of the grade and dockage shown on the ticket, pending final settlement upon a return being received from the Chief Inspector. Samples are drawn by the operator in the presence of the owner from each hopper load. These samples are mixed and a quantity of not less than three pounds is drawn by the owner and the operator and placed in a receptacle which is locked with a lock and key provided by the owner. The receptacle and key are then sent to the Chief Inspector whose duty it is to set the grade and dockage on the sample. The Chief Inspector's finding is binding upon both parties and is the basis of the final settlement between them. In the case of stored grain a storage ticket is then issued by the operator showing the grade and dockage as given by the Chief Inspector for the full amount of the grain. By this storage ticket the company agrees to deliver to the order of the owner at the elevator or at a terminal, the grade and quantity called for by the ticket upon surrender of the ticket and payment of all charges.

The special bin system was in great demand among Western farmers some years ago and it is still looked upon by many as being the most satisfactory method of storing and shipping grain. The United Grain Growers and the Saskatchewan Co-operative have both built their elevators with the design of doing a large special bin business. This is true also of the International Elevator Co. Each of these companies does over 50 per cent of its business on a special bin basis. They do not do any "subject to grade and dockage" business. In the case of most of the companies, however, the elevators are not constructed so as to allow special binning to be done on a large scale. Nevertheless, there are many cases where the farmer prefers to sell or store his grain according to a grade to be fixed by the official inspector and not by the local elevator agent. In these cases trouble often arises through a confusion which exists between the practice of special binning as set out in Section 167 of the Act and that of storing "subject to inspector's grade and dockage" provided for by Section 172. On many occasions during the course of our inquiry farmers complained of something which had happened in connection with a shipment of "special bin" grain, only to find, when all the facts were brought out before us, that their grain had never been placed in a special bin, and that the special bin procedure had not been followed, although the name was given to the transaction, and in some cases, a special bin ticket (Form "C") issued. The fact is that a practice has grown up which partakes somewhat of the nature of both cases provided for by sections 167 and 172 respectively. The elevator agent does not fix the grade and dockage, which would be the proper practice only in the case of special bin grain—but he puts the grain into general storage and sends the sample to the Chief Inspector, —which is the procedure laid down in the law only for grain delivered subject to inspector's grade and dockage. Special binning requires the grain to be kept separate and its identity preserved; storing subject to the inspector's grade and dockage requires the elevator agent to grade the grain and fix the dockage in the first instance according to his own judgment, the grade so fixed by him to be guaranteed by the elevator company. Form "C" should be used only for special bin grain, never for grain stored subject to grade and dockage. In special binning the sample is sent to the chief inspector only in case of disputes as to the identity of the grain having been preserved; in storing subject to grade and dockage the sample must always go forward to the chief inspector. The three companies above mentioned which do not do any "subject to grade and

dockage" business, have also established a special practice to meet the case of a farmer with a small quantity of grain who cannot fill a carload and who still desires to settle on official inspection instead of on the elevator agent's grading. In such cases they put the grain into a special bin, draw a sample, and send this sample to the Chief Inspector to be graded by him, holding the grain in the special bin until the return is received. This practice, of course, is irregular, but it seems to give satisfaction. Other companies have still a different practice. The National Elevator Company, for instance, does both a "special bin" and a "subject to grade and dockage" business. In this last case, however, the company endeavours to keep the farmer's grain separate from all other grain, or sometimes in a bin with grain belonging to another farmer which seems to be of the same quality. After the grain is inspected by carload in Winnipeg the company settles with the farmer according to the official inspection. The sample drawn from the load at the elevator is not sent to the Chief Inspector unless the farmer is dissatisfied with the return. This practice also seems to give satisfaction to the patrons of the elevator.

We cannot recommend that special binning be made compulsory at the farmer's request, because we do not think that present conditions warrant such a course being taken. We believe in this respect that the law should be left as it is. On the other hand, we believe that the method of storing in general storage, subject to the inspector's grade and dockage, is a useful method designed to meet what is undoubtedly the farmer's desire in a great majority of cases, whether recourse is had to Section 167 or 172: that is, to obtain settlement on the basis of the grade and dockage fixed by official inspection. We think that the Act and the Regulations now contain all that is necessary to surround this practice with proper safeguards. The only change in this regard that we have to recommend is that a new form of ticket be provided for grain stored subject to grade and dockage, instead of form "B" being used with a stamp as the practice now is. But in very many cases, the proper procedure is not followed. In the transaction between the owner of the grain and the elevator agent, no confusion should be allowed to exist between special binning and storing subject to grade and dockage, and in both cases, the procedure required by law should be observed in every particular. This result can only be achieved by proper instructions being given in all cases to elevator agents, and by proper steps being taken to see that the law and the regulations governing the operation of country elevators are properly enforced. In this regard, the duty, in our opinion, lies with the Board of Grain Commissioners. This, we think, is a fitting occasion to make a general recommendation in a matter of great importance. The Board, in our opinion, should be furnished with a sufficient number of officials to allow for a thorough inspection during each season of the practices followed in each elevator. There is no doubt that beneficial results would follow and that much of the dissatisfaction which now exists would disappear. The case with which we have just dealt is a case in point. Those who can be looked upon as capable spokesmen for the farmers who deal with the country elevators have assured us that if the regulations governing the practice of storing grain subject to grade and dockage, such as they now are, were carried out in their entirety, the complaints to which this practice has given rise, would very probably disappear. Since we cannot recommend that special binning be made compulsory, some provision must exist whereby the owner of the grain, whether he sells it or stores it, can be ensured of receiving settlement, if he so desires, according to the official inspector's judgment as to the grade and dockage, and, since his grain is taken over by the elevator in the meantime, have the company's guarantee of weight and of a grade fixed by its own agent. The regulations now provide for all this, but in very many cases they are not being followed.

Proper supervision will bring about a proper practice in this, as in other matters. We intend to refer again later to this necessity of closer contact between the Board of Grain Commissioners and the operators and patrons of country elevators.

Considered ideally, the special bin system seems to be somewhat different from what it is in practice to-day. There is no doubt that this contract, in its ideal form, means that the elevator operator may rent to the owner of the grain a bin in the elevator in which to store his grain; the operator guaranteeing to preserve the identity of this grain and to redeliver it in its entirety either at the elevator or in carload lots at a terminal. In order to preserve evidence of the identity of the grain a sample is drawn and put aside, to be used only in case of dispute. In order to settle disputes about the entirety of the grain, it is weighed on its way into the bin and the weight noted, and this weight is guaranteed by the elevator. But since grain in store is liable to shrink and there is necessarily some waste occasioned by the handling in and out, provision must be made for any loss which may reasonably be attributed to these causes. Consequently the contract provided originally that the elevator was to guarantee that the weight of the grain to be delivered would conform "as nearly as possible" to the weight taken in. Later the Board of Grain Commissioners modified this by regulation setting a definite allowance of $\frac{1}{2}$ of 1 per cent per bushel for waste and shrinkage. This allowance is now computed on a different basis according to a table of weights and bushels. The owner of the grain is entitled, on paying all charges, to have the whole of his grain delivered back to him. If on delivery it is found to correspond to the sample the assumption is that the identity of the grain has been preserved. If it is found to weigh at least as much as the weight guaranteed on the ticket, he can have no complaint against the elevator, any difference between the weight on the redelivery and the gross weight going in being attributed to waste and shrinkage. If it is found to weigh less than the guaranteed weight, the elevator operator must make good the difference, the presumption being that the loss in quantity occurred through failure on his part to preserve the quantity intact. Such a contract imposes a special duty on the elevator operator and makes special demands upon his storage space, and doubtless for these reasons the law does not compel him to receive grain on this basis. He is also allowed to charge more for this service than for the service performed in case of general storage. The farmer, on the other hand, might adopt this form of storage, not only in order to secure official inspection of his grain, but in case he wished to sell it for seed grain purposes, or upon a sample market—if one existed—or for some other purpose that would probably bring him a better price than it could command in general storage.

Such would appear to be the ideal behind the system of storing grain in special bin. The practice, however, has deviated considerably from the above outline. In the great majority of cases the farmer using a special bin merely wishes to obtain official inspection of his own grain out of the car at Winnipeg, and he is willing, if not anxious, to have the car go forward as soon as possible. On the other hand, the company does not consider itself as strictly accountable as the above outline would show. Hence a looser practice has grown up and the regulations have been framed to meet it. Upon a close examination of the actual practice we do not see a great superiority in this method of storing grain over the method provided by section 172 and regulations issued by the Board. Special binning, when no mistakes are made and no leakages between bins occur, does ensure the inspection of the actual grain, identity preserved. But we find that nearly all, if not all the companies, claim the right, as they put it, "to be protected in their weights," before they hand the grain back to the owner; and the regulations of the Board meet their requirements. This, of

course, is necessary where a carload is shipped forward out of a greater quantity in store, leaving part of the owner's grain still in the bin; but in practice it extends much further than that. A strict compliance with the special bin contract, as the Act itself no doubt intended it to be, is incompatible with the bin containing any surplus grain not belonging to the farmer. The essence of the contract is that the identity of the grain is to be preserved. We find, however, that each shipment out of a special bin is surrounded by precautions in the regulations which presuppose that some other grain than that of the owner may have got into the bin; grain belonging to the elevator itself or to some other shipper, the mix occurring through leakage or an accident in spouting, etc. And when the grain out of the special bin is found to weigh more than on shipment in, on account of a mixture, the elevator claims, and is allowed, the surplus and at the same time settles with the owner on the basis (which such facts show to be a false basis) of having preserved the identity of his grain. The weight set in the ticket is not considered to be a minimum guaranteed weight, but to be all that the owner of the grain has the right to receive in any event.

On the other hand, if the provisions of the law as set out in section 172 and the supplementary regulations are observed, as they can and ought to be observed, the owner is assured of a genuine sample of his grain being inspected by the official inspector and of obtaining settlement on that basis.

Special bin grain is shipped forward by the elevator to Winnipeg and the terminals in the same way as general storage grain whenever the elevator finds it necessary to make space. Section 164 of the Act has been interpreted by the companies, and apparently by all concerned, to give the elevator the right to do this. No doubt the owners in the great majority of cases are quite willing, if not just as anxious as the elevators, to have the grain go forward. Some, however, who discussed the question with us, seemed to be of the opinion that grain placed in a special bin was kept "out of the channels of trade" during the owner's pleasure, which is not the case; although the Act itself is perhaps susceptible of this interpretation. In fact the companies, generally speaking, have assumed their obligation under a special bin contract to be only to ship the grain with its identity preserved, barring mistakes or accidents, as far as Winnipeg for inspection.

In so far as dealing with the grain commercially is concerned, all stored grain, whether "special bin" or not, is in the same position in the hands of the company. We mention this to meet another suggestion made in favour of special binning, which the facts do not support. The Act, by section 227A, provides that the elevator company is merely the bailee of all grain stored with it and not its owner, and we find the following among the regulations of the Board of Grain Commissioners, approved by Order in Council:—

"No owner or operator of a country elevator or warehouse shall sell, assign, mortgage, pledge or hypothecate any grain stored in such elevator or warehouse, for which graded storage tickets or 'subject to grade and dockage' tickets have been issued, and the owner or operator may be required by the board to produce at any time proper registered warehouse receipts or bills of lading for such grain as has been shipped from the country elevator or warehouse, and for which there is still outstanding graded storage tickets or 'subject to grade and dockage' tickets or special bin tickets."

We recommend, therefore, that the practice of special binning be continued, as the Act now provides, in cases where the elevator agent and the farmer agree to enter into this form of contract; and that the practice of handling grain subject to grade and dockage be allowed also to continue, but only according to the intention of Section 172, when the farmer desires settlement on official inspection in preference to that offered by the elevator agent, and then only in strict compliance with the Act and the regulations.

LOADING PLATFORMS

The loading platform forms the alternative method of shipping grain from a country station to that provided by the country elevator. The farmer, who makes use of the platform, avoids the payment of elevator charges, and does not dispose of his wheat on a street price basis. On the other hand, he has to secure his own car and attend to its loading and shipping. The loading platform fills a useful purpose, and in our opinion the present provisions of the law, concerning them, are satisfactory, and we have no changes to suggest. The farmer who makes use of the loading platform will be affected, however, by the recommendations we make further on in this report, on the question of bulkheading, the time allowed for loading cars, etc.

SOME RAILWAY PROBLEMS

The matters with which we deal under this heading do not include the larger question of trade routes and freight rates. These are referred to elsewhere. At this point we merely describe the movement which now goes on of the crop on the railways, and deal with some of the matters that are incidental to all railway transportation.

Moving the crop from Western Canada is a transportation task of the highest magnitude. For a short period, all the resources of the railways are used to their highest capacity. The grain must be kept moving in a continuous flow from the country points to the terminals. We find no general complaint prevalent with regard to the manner in which this service is performed. When one considers the average crop harvested, the length of time occupied in threshing the grain, and the elevator facilities at the terminals to receive shipments, the railways appear to be keeping abreast of the growing seasonal demand for transportation facilities. It is estimated that 60 per cent of the cars employed in moving the crop lie idle during spring and summer. There have been no complaints of serious blockades due to the lack of railway service.

The Canadian Pacific Railway Company and the Canadian National Railways have each developed a very complete and careful organization to provide for the accumulation of grain cars at convenient points on their lines before the opening of the crop-moving season. These organizations are then carried through during the period of movement, and keep the cars directed day by day to those parts of the grain territory where shipments are available. For the crop movement of 1922-23, the Canadian Pacific Railway had available between 35,000 and 36,000 cars, and they unloaded during that season 105,000 cars of grain. For the crop year 1923-4, about 36,000 cars were available, and up to February 27, 1924, there had been unloaded in the neighbourhood of 147,000 cars. On September 25, 1922, the Canadian National Railways had 36,684 cars in service. On the same date in 1923, 40,071 cars were in service. For the crop year 1923-24, the Canadian National Railways up to February 6, 1924, had loaded 120,440 cars. During the last three years, the Canadian National Railways increased the numbers of cars in service by approximately 15,000. A general factor meaning an increase in facilities is the use of larger cars and heavier loadings. As an indication of this, it was pointed out by Mr. J. D. Fraser, assistant chief inspector for Canada, that in a given period of ten days in December, 1924, 25 per cent of all the cars of wheat inspected were overloaded as far as the inspection department was concerned. It is admitted that if these cars had been properly trimmed sampling for inspection in two-thirds of the instances could have taken place.

A difference of opinion may easily develop as to what constitutes a blockade or inadequate supply of cars. Taking into consideration the whole movement of the crop, both territorially and with respect to the element of time of

readiness to ship, the railway officials may feel that they are making a fair distribution. Any district, however, ready to ship, in its desire to get the crop away early, may demand a disproportionate car allotment, and not receiving as many cars as asked for, may allege that there is a blockade. If this occurs, shippers or elevator companies, who do not consider they have received an adequate supply of cars, have the privilege of appealing to the Board of Grain Commissioners. The Board has the right to enforce an equitable distribution of cars, and in order to relieve a situation that may be bad has the right to order the railways to place certain cars in certain territory out of turn. Likewise the Board of Railway Commissioners have wide powers to order facilities to be afforded to any district where there is danger of a serious blockade. In 1922 and 1923, the Canadian Pacific Railway received from the Board of Grain Commissioners four complaints with respect to an inadequate car supply, and from the Board of Railway Commissioners two complaints. For the crop year 1923-24, six complaints were received from the Board of Grain Commissioners and two from the Board of Railway Commissioners. On the basis of between seven and eight hundred stations to be supplied with cars, it is evident that complaints are comparatively rare, and that where complaints do arise, the law as it stands provides a method of dealing with them promptly.

CAR ORDER Book

To prevent discrimination in the distribution of cars allotted to each station, the Grain Act requires the railway companies to keep a car order book, in which applicants for cars shall make order. In addition, the act requires that the railway agent shall post in a conspicuous place a written notice signed by him, giving the date of application and the name of each applicant to whom on that date he has awarded cars for the loading of grain. Where there are more applications for cars than cars available, the order of distribution follows the order of application. These regulations are in the nature of a general safeguard against favouritism or discrimination. According to the evidence, the actual practice has been to compile a car order book in accord with the act where there has been a need for it, but when cars have been plentiful, it has not been considered necessary. The car order book is kept available if the shippers wish to use it. Mr. Cotterel, of the Canadian Pacific Railway stated that "in 1916, 1917, 1918, 1919 and 1920 and even 1921, when the crop was just an ordinary crop, the car supply was sufficient to take care of all points, and consequently there was no necessity for placing car order books in use in many of the points. It occasionally happened that they might use it, but as a general rule it was not in use." Where there has been a demand for a car order book, shippers have filed their applications and the book has been made up on that basis. Free access to this car order book has been given to all shippers, but the regulation requiring a written notice signed by the agent and posted in a conspicuous place, showing to whom the agent had allotted cars each day, does not appear to be observed. The practice of allowing free inspection of the car order book by all shippers appears to be a satisfactory one, and it would be well, we believe, to incorporate it in the Act in lieu of the present provision requiring the posting up of applications for cars.

In one instance, evidence was presented to the commission that the car order book had been "plugged" with fictitious names. Officials of the railways admitted that this occurs sometimes, but they pointed out that the station agent can hardly be expected to investigate the bona fides of each applicant for a car. Further regulations designed to prevent any irregularities in applications for cars might easily prove cumbersome and of little practical value. When a complaint is made to the Board of Grain Commissioners that there are irregularities in the car order book, the latter have asked the railway officials to investigate. If anything irregular is found, the railway agent cancels the

names in the car order book, and gives twenty-four hours notice to begin a new book. The law now provides penalties for offences in connection with applications for cars, and these should prove a sufficient deterrent. In a single instance mentioned where a railway agent was mentioned as having given cars out of turn, it was pointed out that he was discharged from the service of the company.

The act provides that in the allocation of cars at any shipping point, the elevator companies rank as shippers in the same way as individual farmers or other grain dealers shipping grain. We have already pointed out, in dealing with the subject of country elevators, why, in our opinion, a freer allotment of cars should be made to the elevator.

DEMURRAGE

The usual period allowed to load cars with goods is forty-eight hours. Grain is an exception to this rule, the time allowed being only twenty-four hours. This discrimination was made the subject of complaint by the traffic commissioner for the province of Alberta. Once a car load of grain is accumulated in an elevator, to spout it into a grain car is a simple and expeditious operation. The twenty-four hour rule does not cause hardship for shipments from elevators. It strikes at the farmer who uses the loading platform. It was contended that it was unfair that a rule should be enforced that singled out for discriminatory treatment one class of shippers, particularly as the grain shipped over the platform in most instances had to be hauled some distance to the loading point. Railway officials claimed that the rule was not strictly enforced, and that the number of instances where demurrage was assessed on the Canadian Pacific Railway was less than one-half of one per cent of the cars loaded over the platform in a movement of 8,240 cars.

It was contended that if the longer period were granted, it would slow up the movement of traffic. Evidence was given that the peak of the grain movement is over by December first. Between September first and December first, while the movement is in full tide, it is possible that some delay might be caused by granting a longer period than twenty-four hours for loading cars. During the remainder of the shipping season there are not such conditions of traffic congestion as to warrant discrimination in the time allowed to load cars between grain and other commodities. We are of the opinion that except for the months of September, October and November, forty-eight hours for loading grain into cars should be allowed before demurrage is assessed.

LEAKAGES

The problem of preventing loss to the farmers and to the carriers by the leakage of grain from cars in transit is important. The evidence of M. J. G. White, chief weighmaster for Canada, is that out of approximately 229,000 cars unloaded during the crop year of 1922-23, approximately 30,500 were reported to him as leaking. It was claimed by officials of the Canadian Pacific Railway that this number included 4,200 cars reported at different points on the line, and counted twice, but it was not made clear whether the figures presented by Mr. White were net figures. In any event, losses by leakages are sufficiently great to present a serious problem.

There are really two problems. In the first place, that of preventing the loss of the grain in transit, and, secondly, that of adjusting claims against the carriers, when leakage has taken place. Both railways inspect all cars, condition them where necessary, and card them as fit for grain before they are placed in service at the beginning of the season. Before grain is placed in a car, the car is again inspected by the local railway agent, and by the shipper. These precautions are taken to ensure that all cars leave for their destination in a proper condition, for holding grain. To prevent loss in transit, the cars are further

inspected at all divisional points. When leaks are discovered, repairs take place at once. Section men and station agents have general instructions upon detecting a grain car leaking in a passing train to take steps immediately to have the train stopped at the nearest station, where repairs will be made.

Leaks detected in the Winnipeg yards by the samplers of the inspection department are reported through the inspection department to the chief weighmaster. The railway officials and the shippers are also notified.

Definite government inspection for leakage is made in the yards when the trains arrive at the head of the lakes, and inspection is again made when the cars are delivered at the terminal elevators. It will be observed that government inspection is primarily to protect the shipper, and that precautions taken by the railways are primarily to protect themselves against claims for shortages. The railway companies have every incentive to reduce losses of this nature, since it means a reduction in the number of claims they must settle for shortages. Every possible precaution on their part seems to be taken at the present time.

When a leakage is detected by the inspection or weighing department, this information is transmitted to the chief weighmaster, and a report accompanies the official certificate sent to the shipper or shipper's agent. It is then possible for the shipper to press a claim against the railways for the amount of grain lost. Where a leak has occurred en route, however, and has been detected and repaired before the car reaches Winnipeg, it is possible that the shipment may go forward to the official weighman without the loss of grain being noticed by the government officials. The fact that there has been a loss is reported to the Freight Claims Agent of the railway, but is not known to the shipper or his agent. The shipper may be puzzled by the official out-turn of his car not coming up to expectation, but has no positive evidence to adduce as a reason.

Several suggestions were made with a view to eliminating loss to the farmer that might arise in this fashion. Some elevator companies paste a slip on the car door, stating the amount loaded into the car. If the official weight does not tally, an investigation is at once instituted for evidences of leakage or theft. Where the grain is loaded over the loading platform or is spouted into the car from the elevator without being weighed, all the information that can be given as to the contents of the car at the time of loading is the height of the load line. The chief weighmaster suggested that when leaks are reported by those conducting transportation to the Railway Claims Agent, they should also be reported to him. This suggestion was strongly opposed by counsel for the railways on the ground that it would be "simply an invitation to put in claims". The attitude of the railways appears to be that they are ready to pay claims for all losses that actually have occurred, but fear claims for amounts larger than have been lost. The situation is complicated by the absence of proof in many instances of the exact amount placed in a car.

An application to the Board of Railway Commissioners by the United Grain Growers' Company, a year ago, led to an arrangement being made by the Chairman of the Board, whereby the railways agreed to furnish any information they possessed of a car leaking, on an application being made by any person with an interest in the grain contained therein. At present, therefore, the situation is that if the outturn of a car is less than is expected, and there is no official notification of leakage in transit, the shipper or shipper's agent may apply to the railway for a report on the car. Their reply will show whether the car had leaked and had been repaired before reaching the terminals.

OTHER PROBLEMS

The question of bulkheading has been disposed of in connection with country elevators. The question of car order points, and of stop over privileges are part of the subject-matter of sample markets and interior public elevators, and will be dealt with accordingly.

PUBLIC AND TERMINAL ELEVATORS

Great difficulty arises in dealing with the subject now in hand, on account of the confused nomenclature found in the Canada Grain Act. We shall refer to this question again, later on, in dealing with "private" elevators. We recommend that care be taken on an early occasion to provide a suitable classification in the Act for the different types of elevators that receive grain after it has received official inspection. The matter is one of accurate draftsmanship, and we do not think it requires further elaboration by us here. We refer to it in order to point out the difficulty we find in identifying by a general name the class of elevators with which we now intend to deal.

Our reference under this heading is to the elevators (not private) at the head of the Lakes and at Vancouver, for instance, which appear to be more commonly known in the trade as "public terminals".

Although these elevators are of the greatest importance in the grain trade, on account of the nature of the service they render, and of the great quantities of grain which they handle, we find, as a result of our investigation, that we have little to say regarding their functioning. This, no doubt, speaks well for the method in which the operations of these houses are conducted. It is the duty of these elevators to receive all grain tendered to them for storage in a dry and suitable condition for warehousing, to clean it and to account for the screenings, to bin it according to grade, keeping each grade separate and unmixed, and to ship out equal quantities of the same grade when called upon to do so by the owner or his assignee.

There are four subjects which call for our attention in relation to these elevators.

CLEANING.

This subject of cleaning is dealt with more fully under the heading of "cleaning and the disposition of screenings". We wish only to add here the recommendation that steps be taken to provide all of these elevators with sufficient cleaning apparatus. There seems to be a deficiency here, at least in some cases, which makes itself felt disadvantageously during the busier seasons. In different parts of this report, we shall have to refer to the great importance of all grain being shipped out commercially clean, and the first requisite for this end is, of course, the existence of adequate cleaning facilities. The matter is one for regulation and supervision, each elevator presenting a case for the consideration of the Board of Grain Commissioners.

MIXING

The identity of the grades of grain handled in the public elevators must be preserved. The rule against mixing is the fundamental rule governing the operation of these houses. We have no evidence whatever of any illegal mixing having been done. A practice exists, however, which is of a doubtful character and which requires explanation. The matter was brought to our attention by a charge of "mixing" which was made against the Government elevator at Port Arthur, operated by the Board of Grain Commissioners. An examination of the facts involved disclosed the following practice. In the process of cleaning and separating wheat, a certain quantity of the grain passes out in the screenings. The custom is to reclaim this grain from the screenings. Of necessity, the different grades of wheat are often cleaned simultaneously, and the screenings from all the cleaning machines are run into the one bin. It would be impracticable to keep separate the reclaimed wheat from the screenings of the different grades. As a result of the operation of cleaning and reclaiming, the bin in question is found to contain a quantity of wheat admittedly of a low grade.

A sample of this wheat, then on hand, was inspected by an expert for our information, and found to be of grade 5. As a rule, it cannot safely be said to be better than feed. But this wheat has come from all the various grades which have been cleaned. The custom in the Government elevator, and, we understand, it has been a general custom of the business, is to trickle a thin stream of this reclaimed wheat out into shipments from the bins containing the various grades, each grade being made to absorb a quantity proportionate to the quantity estimated to have come out of that grade in the cleaning.

The case presents a real difficulty. The grain run into the screenings must be recovered. It is commercial grain, and the elevator is responsible for it. It cannot be allowed to be shipped out in the screenings. Unless some means were adopted to turn it back into the grades, the elevator would find itself short. Admittedly, there is a weakness in the present practice, through the fact that the wheat thus turned back into the higher grades is of lower quality than the bulk of the grade. Bearing in mind, however, the comparatively small quantity of reclaimed grain handled, and the care taken in having it reabsorbed, we believe that whatever injury may occur is exceedingly slight, if not negligible.

When these facts were brought to our attention, the Board of Grain Commissioners undertook to investigate the practice further, with a view to seeing whether a better system could not be devised to take care of reclaimed grain. There is no doubt that it must be taken care of, to avoid shortages. We believe that the best thing to do is to allow the problem to be worked out by the Board.

WEIGHING

The weighing of grain into and out of the public terminal elevators, as well as the annual weigh-up of these houses, is conducted under the direction of Mr. J. G. White, the chief weighmaster to the Board of Grain Commissioners. We devoted some time to a study of the methods followed by the Chief Weighmaster, and in our opinion this branch of the service is operating most satisfactorily and efficiently. We have no recommendation to offer on this subject, except in so far as it is included in the general observations we shall make later on concerning the administration of the Canada Grain Act.

SUPERVISION

Section 95 of the Canada Grain Act provides that all grain in public terminals shall be binned and handled under the "direction, supervision and control" of an inspector. Subsections 1 and 2 of this section provide particularly as follows:—

"All grain stored as aforesaid shall be binned under the direction, supervision and control of the inspector, deputy inspector or inspecting officer. The inspector, deputy inspector or inspecting officer shall have full control of all grain in terminal elevators and no grain shall be shipped out of, transferred or removed from any terminal elevator without his supervision.

"2. The inspector shall keep the proper records of all grain received into store in any terminal elevator, which records shall show the particulars of each parcel or car-lot of grain received, the date received, the grade, the dockage, if any, and the number of the bin in which such grain has been stored; and he shall keep similar records of all grain shipped from any terminal elevator, which records shall also give the name of the vessel or the number of the car into which such grain has been delivered."

A question was raised before us as to the degree of supervision which is in fact exercised over the operations of the elevators by virtue of the method approved by the Board of Grain Commissioners. We found that in lieu of the elaborate and constant form of supervision which the Act evidently calls for, a much simpler system has been followed, whereby the duty of the elevator

to preserve the identity of the different grades of grain and to account for the quantities handled is controlled by an annual weigh-up, and the registration and cancellation of warehouse receipts. We cannot better set out the reasons for the adoption of this system and the abandonment of the more complicated supervision called for by the Act than by citing a memorandum on the subject, prepared for our information by Dr. Robert Magill, now Secretary of the Winnipeg Grain Exchange, who was chairman of the Board of Grain Commissioners when the present practice was put into effect. Dr. Magill's memorandum is as follows:—

"The method of supervising the operation of public terminal elevators was taken up by the Board of Grain Commissioners shortly after it was created under the Act of 1912. The question arose because of the necessity of protecting shippers or owners of grain in the public warehouses.

"The board, at the same time, was considering the advisability of nationalizing the public elevators, and it decided to recommend to the Canadian Government that an elevator should be built and operated by the board as a public utility, and that, so far as the other elevators were concerned, the method of supervision should be made more effective.

"The system of supervision which the board found in operation at the time of its creation was based on bin records. Inspectors and their assistants endeavoured to keep records of all the grain shipped into each bin and of all the grain shipped out of each bin; and for each large terminal there were masses of bin records. Take a terminal of a capacity of from 3,000,000 bushels upwards; consider the quantity of grain put through such a house in twelve months, and imagine the masses of records of shipments into and out from those bins. Those records were useless to the Board of Grain Commissioners. They conveyed very little to the board, and in no way enable the board to exercise any control whatever over the operations of the houses. The board, consequently, after considerable investigation and deliberation decided to put in a different method of supervision consisting of, first, compulsory registration and cancellation of all warehouse receipts; and, second, an annual weigh-up.

"It is understood that the warehouse receipts showed the grades and quantities of grain received into the house; that the house was liable for those warehouse receipts and must honour them; that when these were registered with the proper details, there was a complete record of all the grain received into each public warehouse.

"Similarly, upon the shipment of grain, the warehouse receipt for the shipment was cancelled, with the result that at the end of the year the board could ascertain definitely and accurately all the quantities of all the grades received into and shipped from each house, could list any outstanding warehouse receipts, could weigh up whatever grain was left in the house, and in that way form an intelligent opinion upon the handling of the grain by each house, grade for grade.

"The system of bin records had been recommended, it had been honestly worked. It was found by the Board of Grain Commissioners to have been expensive, and to be useless; with the result that the other system of supervision was inaugurated.

"The object of the board was not to give protection or privilege to the public warehouses, but to give a more adequate protection to the public and to the shipper or owner of the grain.

"I should mention that a large elevator, handling a large quantity of grain is a complicated piece of machinery, and that control by means of bin records, to be anything near complete, would involve a very large expenditure; and in the opinion of the Grain Commission it was unworkable.

"Further, in the opinion of the Board of Grain Commissioners then, the principle of it was doubtful. At any time, if the grain offered to be loaded by the house was challenged, it was difficult to meet the reply of the elevator that the grain was put into the bin by Government officials. In the same connection, the effect of the charge was to place responsibility for the grades squarely upon the house. The result was that the older system of bin records was dropped, and what the board regarded as a more effective system of registration and annual weigh-up was inaugurated. It has been retained since."

There is no doubt of the impracticability of an actual step to step supervision of the operations of an elevator being carried on by inspectors. We are satisfied of this from our examination of the question. We believe, however, that the practice now followed by the Board, as above outlined, would be supplemented advantageously if the elevator were required to furnish to the Board a duplicate of all its records. We think that a system of closer contact could thus be worked out by an expert accountant on behalf of the Board, whereby the

Board could establish a more steady and constant supervision over the operations of the elevator. We think it desirable that steps be taken to establish this closer contact.

INTERIOR STORAGE ELEVATORS

These elevators are located at Calgary, Moose Jaw, Saskatoon and Edmonton. Certain of these elevators were built originally to meet car shortages. It was believed that the short haul to these centres would conserve the use of rolling stock and eliminate blockades in the country. The record shows that they have not been used extensively except when exceptional conditions have developed. Indeed, we were frequently asked why they were not being used to their fullest capacity. At Lethbridge, Macleod and Prince Albert it was urged that we should recommend that storage elevators should be located at these points.

Certain factors militate against the use of interior storage elevators by the farmers. When a farmer's car is ordered into an interior storage elevator it is inspected and graded as it goes in and is binned according to the grade placed upon it by the inspector. If the farmer thinks that he should have obtained a higher grade for his grain he cannot appeal for reinspection or survey, for the identity of his shipment has not been preserved. In practice shipping to an interior storage elevator means that the farmer relinquishes any hope of appeal if the grade placed upon his grain does not come up to expectation. This, he is loath to do, and hence he prefers to ship to the terminal, since his car, if properly loaded will be inspected before its destination is reached and he can make an appeal on the grade if he wishes to do so.

Placing grain in the interior storage elevators ordinarily involves additional handling. Ultimately the grain will have to be shipped forward to the terminals and placed in storage there. The shipper will have to bear the expense of duplicate handling and an additional railway charge for extra terminal services. Unless the grain is very dirty and a saving is made on freight charges through the removal of the dockage it does not pay the farmer to ship to the interior storage elevator. If it is very dirty there is some saving to the farmer in shipping it to the interior elevator to have it cleaned there.

For storage for a period of time while the farmer is awaiting a price at which he will sell, storage at interior points offers disadvantages. The grain is not in the best selling position. It is back too far from the terminal and the warehouse receipt is not deliverable in fulfilment of the ordinary contract made on the Winnipeg Grain Exchange. The grain for that purpose must be forward at the terminal. For all these reasons in an ordinary year interior storage elevators have difficulty in securing patronage. Moreover, it may be pointed out that the original reason of providing these elevators for meeting car shortages has disappeared to a considerable extent with the reorganization of the railway lines composing the Canadian National railways.

On the other hand these elevators are very useful when climatic conditions create anything of a blockade in handling grain, or where there is a large amount of wet or damp grain to be cleaned and dried. They are a resource to fall back upon under these conditions.

They also provide a local market place for buyers of coarse grains or screenings who wish to feed stock. This has its advantages particularly in years when ordinary feed is scarce and the farmers wish to obtain screenings, or again when the climatic conditions have caused a lot of the grain to be of very low grade.

As long as grain from Southern Alberta moves through Calgary to the Coast there does not seem to be any reason for building an additional storage elevator at Macleod or Lethbridge. Nor does the application for a storage elevator at

Prince Albert disclose any pressing reasons why the elevator at Saskatoon would not be sufficient for the district. It is possible that both in Southern Alberta and around Prince Albert, the growth of mixed farming, stock feeding, and future railway development might make storage elevators in these regions at some future date desirable.

THE GRADING OF GRAIN

Methods of grading

Grain of any particular kind has uses that are peculiar to itself. Wheat for flour making, durum for semolina, oats for oatmeal, barley for malting or pearl-ing, flax for oil, and both oats and barley for feeds for stock, all depend for their market values upon three chief characteristics—quality, condition and admixtures. The miller's chief concern about wheat is again of threefold nature—yield of flour and offals, quality of flour and offals, and cost to clean and prepare the wheat for the mill. We are in the habit of thinking of wheat in bulk—wagon-loads, carloads, cargoes and in millions of bushels. But wheat, no matter in how large quantities we consider it, is made up of single berries, and the value of the mass depends upon the kind, quality and condition of these small units together with their freedom from matter other than wheat. The same is true in respect to other grains.

In connection with organized produce markets, there has grown up gradually a system of grading or classification of grains in order to facilitate both home and international trading. The flowing properties of grain have been taken advantage of, and at every point along the line from the thresher to the consumer, where possible, grain is made to flow in a stream. This feature, in connection with Canada's grain marketing system, makes grading an absolute necessity. Consumers—millers, etc.,—for the purpose of purchasing ahead at what they may consider an advantageous time or price, can do so only if there are some definite standards of quality, backed up by certificates or warehouse receipts upon which they can rely. If the standards are not reliable, the miller or merchant, or both, will buy on wide margins to the disadvantage of the producer of superior quality grain.

Canada and the United States are the only two grain exporting countries whose marketing is based upon grading systems. The United States had several grading systems. Each grain-growing state had one of its own, put into operation first by a board of trade or exchange, and later by the State. And then, at each port of discharge, another standard was established to suit the exporter. Different ports had different standards. The millers and importers in the receiving countries protested vigorously against this system. It worked hardships upon them, and also upon the producer of the grain. The United States now has a federal system for interstate and international trading, which is having a beneficial effect upon the grain business of the country as a whole. Canada has one national system, adapted to take care of the variety of grades occasioned by climatic and other conditions.

FIXING STANDARDS

The standards for the principal grades of grain for export should be such as will permit of the admission of large quantities within the grade, in order that it may be handled economically in bulk, through terminals, transfer houses and in cargoes. At the same time, the quality of the grade must be maintained at a fixed standard of excellence. The standard of a grade might be fixed so high that a cargo could not be accumulated, or the amount represented by it would be so small that the trade could not care for it, owing to its irregularity

on the market. If, for any reason, the lower line of the grade should be depressed too far, then the average quality of the grade would be lowered. This would result in a lowering of the price and a loss to the producer of superior grain out of all proportion to the gain secured to the producer of the inferior grain. It is necessary that the standards of the various grades, especially those of the good grain, such as Canada's Nos. 1, 2 and 3 Northern, be carefully defined, in order that as little injustice as possible be done to the producers.

In order that trading on grades may be carried on with consequent gain to both producer and consumer, the grades must be as nearly uniform as possible throughout the year, and the same this year as the preceding one. The consumer must have absolute confidence in the system, and in the manner in which the grading is carried out. Reliability will result in purchases being made on the closest possible margins, owing to the removal of much of the element of risk. This benefits the producer.

The nearer the grading is done to the source of supply—the wheat fields—consistent with efficiency, economy and accuracy, the more satisfactory the system is to both the consumer and the producer. The Old Country buyer, especially the miller, has learned through experience to be much concerned about the quality of his shipments, especially if they are subject to two gradings. As an example, take Duluth shipments of hard, red, spring wheats from the prairie states some years ago. Confidence became established in the State system of grading, but the English buyer was much disturbed over what might happen to Duluth wheat after it reached Buffalo and Atlantic ports.

Britain has three methods of buying wheat on contract, viz:—

- (1) Official certificate of inspection to be final as to quality;
- (2) of fair average quality of the season's shipments at time and place of shipment;
- (3) about as per sample.

Canadian wheat is sold almost entirely on the Certificate Final. Small amounts are sold on sample. The Argentine and Australian crops are sold largely on the f.a.q. (fair average quality) plan, which means that samples of the crop are taken at the port of discharge. These are kept over a period of perhaps a month and an average sample drawn. A given weight per bushel is arrived at, and specified in the contract. When the shipment arrives, say at Liverpool, samples are taken, and in most cases arbitration awards are made by a committee appointed for that purpose by the Corn Trade Association in the interests both of the buyer and seller.

When grain is sold at "about as per sample," a sample is sent ahead by the shipper. The receiver, after examining it for the purpose of ascertaining its value, seals the package and keeps it for comparison when the cargo arrives. Wheat purchased by this method, too, is subject to arbitration. Most shippers in Canada and the United States prefer the first plan, as it is felt that it is more economical, less cumbersome, and causes less delay. They claim that the arbitration method is just the opposite in these respects, and in addition that when an award is made, the shipper usually stands to lose.

On the other hand, the miller in the Old Country claims that the arbitration method ensures him a fair settlement, but that the first method is more expeditious and economical. This constitutes a very strong argument in favour of uniform standards that can be maintained, to the end that the confidence of the consumer may be established and retained in the matter of the reliability of a grading system. According to evidence gathered in the British Isles and Holland, Canada's grading system is the most reliable so far as grains arriving on those markets are concerned. The producers in some competing wheat-exporting countries, suffer owing to the careless method, or complete lack of

method, in grading and marketing the wheat crop. India is the worst offender, and probably Russia next. India's wheat, especially that from the port of Kurachi, is paid for only on the cleaned, analysed sample, and so is Russia's. Every cargo is sampled and the rubbish separated, sometimes to the extent of 20 per cent, in the case of Kurachi, when it arrives in England. Argentine's grading is not what it should be, but is gradually being put upon a higher standard to the benefit of the producer. Australia has a very clean white wheat, but her grading is not such as commends itself to the English miller. This results in a hardship on the producer.

Canada's grading system.

Canada's grading system was established under Act of Parliament and is defined in the Canada Grain Act of 1912. It is provided that every carload of grain passing through Winnipeg shall be stopped, opened, sampled, inspected and officially graded by the inspection department, which is maintained for that purpose. Arrangements have been made for inspecting all cars of grain arriving at the interior terminals—Moose Jaw, Saskatoon, Edmonton and Calgary, and at inland mills. All cars whose destination is Vancouver are inspected in the yards as they pass through Calgary and Edmonton. When cars are too full to be inspected at Winnipeg, Calgary or Edmonton, provision is made to have them done on arrival at the ports, either at unloading or in the terminals. In addition to this, there is inspection of grain in both carload and cargoes out of public and private terminals at Fort William and Port Arthur and Vancouver. This will be discussed more fully in another part of this report.

Wheat Grades.

The flourmaking spring wheat of the Canadian prairies is, at present, divided into five classes, as follows:—

- (1) The sound wheat which falls into what are called the statutory grades, No. 1 hard, Nos. 1, 2 and 3 Northern;
- (2) Such wheat as is affected by climatic conditions which vary from year to year. These fall into what are termed commercial grades that are set every year by a Standards Board provided for in the Canada Grain Act. These grades are called Nos. 4, 5 and 6 Northern, and feed, and sometimes because of peculiar conditions such as rust, hot winds at ripening, etc., additional grades are set, called Nos. 4, 5 and 6 Special.
- (3) All wheat that is unsound, musty, dirty, smutty or sprouted; or that contains a large admixture of other kinds of grain, seeds or wild oats; or that, for any cause, is not fit to be classed under one of the recognized grades, is called "Rejected."
- (4) Wheat that is in a heating condition or badly bin-burnt, regardless of the grade it might otherwise be, is called "condemned."
- (5) All good wheat that is excessively moist and therefore unfit for warehousing, is called "No grade."

The Canada Grain Act provides for grading all kinds of grain according to the above classes, and the grades are specified for each kind.

While the grading of Canadian grains is done on bulk carloads or part carload lots, the actual inspection is made of a sample weighing $2\frac{3}{4}$ to 3 pounds, in the case of wheat, which has been taken from the bulk in such a manner as to be as nearly representative of the mass as possible. If, from any cause, it should happen that the sample failed to represent the lot—either superior or inferior to it—then it follows that the grade for the lot will be wrong.

During the sittings of the Commission, we heard much about the grading of grain. It was natural that we should, for the price to the farmer varies

according to the grade, and the miller's profits depend in large measure upon it. The difference in price between one and two Northern is about 3 cents, and between two and three Northern about 4 cents, and so on down the grades, depending upon the factors that affect the spreads. The complaints were made against (1) the specifications of the grades, (2) the taking of samples at Winnipeg, (3) the grading, and (4) setting dockage.

As to the specifications, it was pointed out that the definitions of the statutory grades in the Grain Act, Section 107, were not clear and that they should be defined so as to make them easily understood by all who have to do with them, farmers, country buyers, the inspectors and the trade generally. As an example, take the definition of No. 1 northern wheat, which reads as follows: "No. 1 Manitoba northern wheat should be sound and well cleaned, weighing not less than 60 pounds to the bushel, and shall be composed of 60 per cent of hard Red Fife wheat." What is "sound" wheat? Is bran frosted wheat sound? Is slightly bleached wheat sound? Is wheat that has just started to sprout sound? And so the questions might be multiplied. Sound should be clearly defined for the purpose of the Act. And again, what is the meaning of "well cleaned"? How clean shall wheat be to be "well cleaned"? Does it mean that it shall be free from all admixtures of whatever kind, and fit to go to the rolls in the mill? Or is it to be only commercially clean, and, if so, what degree of cleanliness shall it be? Or does well cleaned mean that it shall be free or nearly free from other grains such as barley, rye and oats? And what may the 40 per cent other than the 60 per cent of hard Red Fife wheat consist of? May it be soft wheats, white wheats, other varieties of wheats, durum wheats, or what must it be? And what degree of moisture may it contain to be fit for warehousing?

And then, No. 3 Manitoba northern is puzzling. According to the Act, "Any wheat not good enough to be graded as No. 2 northern shall be graded No. 3 Manitoba northern in the discretion of the inspector. This is known as the inspector's grade, and it varies from year to year; too much, it is thought by both producers and millers. It was suggested that it should be more clearly defined. And so with the grades of other grains.

There were those who complained that wheat that was No. 1 Northern at the opening of the season should not lose a grade, or more often two grades, for having lost its colour through exposure to rain, snow, etc.; that colour was given too important a place in determining the grade of wheat; that sprouted and slightly frosted kernels, and kernels discoloured or shrunken by disease should not be so severely discriminated against. Some claimed that weight should count for more than colour and that it should have more importance attached to it than at present. What is the significance of colour in hard spring wheat?

Complaints were made that the samples of grain on which the grading is done were not taken properly from a load, and that often the car was not sampled at all, but that other grain was substituted. This criticism applies to Winnipeg and other inspection points. It was said that if a car door were hard to open, the car would be passed up; that time was not taken to probe the car, but a sample skimmed off the top where light grain and screenings had accumulated through the shaking of the car on its journey from the country point. It was claimed that because much sampling had to be done at nights, proper samples could not be taken from a large percentage of the crop. It was felt by some that the men doing this work were underpaid, and that not enough care was taken in the selection and supervision of the samplers. It was urged, too, that the sampling could not be done properly in the many cars that are filled too high for a sampler to work in. There appeared to be fairly wide distrust in respect to the sampling of cars.

The complaints against grading were many and varied. Numerous cases of what appeared to be bad judgment on the part of the inspectors were cited, and strange to say the severest criticism of the inspection department came from the producers in Manitoba, not from those in Saskatchewan and Alberta, who are farther away. Too often the inspection department was linked up with the grain exchange, and referred to as if they were one and the same institution. The producer seemed to feel that the inspection department was operating in a manner against his best interests.

And similar complaints were made in respect to the setting of dockage. Cases were cited where dockage had been set too high, and again where it was too low, to prove that the sampling and the inspection were not properly done.

It was felt by witnesses in Saskatchewan and Alberta that their distance from the inspection point operated severely against them in the matter of cars too full for sampling at Winnipeg, that had to be sent to the head of the Lakes for sampling and inspection. Before word could get to them of the grade, the car would be unloaded, the identity of the grain lost, and no possible chance for re-inspection or for making an appeal. It was suggested that some system might be adopted to permit of cars being sampled as they passed through points like Moose Jaw, Saskatoon, Watrous, etc., and the samples sent to Winnipeg, or inspected locally by a branch of the department that might be set up to take care of this work. In this connection, it was thought that in case there became a demand for quantities of high protein wheat this would facilitate the securing of samples for making the necessary tests before the cars reached Winnipeg. It was very evident that the producers are aware of the importance of the sample in connection with grading, and are anxious to have this part of the work done in such a way as will insure justice being done to the carload or cargo, as the case may be.

In order to afford greater protection in this respect, it was proposed that a duplicate system of sampling be substituted for the present one. Commission men and others interested would have access to one set of samples, and the inspection department the other for the purpose of fixing the official grade and dockage. In case the grade and dockage were not satisfactory, attention could be called quickly to the apparent error, and re-inspection could be asked for at the head of the Lakes or other terminal point. The main purpose of this duplicate system was to allay suspicion in the minds of the producers; to establish confidence in the manner in which the sampling is done, to ensure the greatest possible degree of care and accuracy in the taking of the samples and in grading.

The actual work of grading was complained against. The feeling was expressed quite commonly that the grading was done to favour some one other than the producers of the grain. It was felt that the grading was too severe, especially on bleached, sprouted and otherwise slightly damaged wheat. It was not easy for the producer to understand why certain causes should produce deterioration, and the grading officials were the ones who had to take the blame. There was no charge of dishonesty, but the thought expressed was that their proximity to the grain exchange, and their remoteness from the producer affected their judgment, to the advantage of the buyers of grain.

The moisture content of grain was a subject that brought forth a good deal of criticism, especially in the northern part of the grain belt, in connection with both wheat and oats. It was felt that the moisture limitations were too low and too rigid, and some lack of confidence in the testing for moisture was expressed. Emphasis was laid upon the matter of having this and other questions in respect to the condition and milling qualities of grain made the subjects of thorough scientific investigation, in order to enable those in charge to establish, if possible, a system of grading, that will more nearly meet the

conditions of grain production and marketing over so large an area as the three prairie provinces. Protein content and quality of gluten, moisture determination and moisture content for safe warehousing, bleached wheat and wheat damaged by disease and frost were specially mentioned subjects for investigation.

There were complaints, too, that the grading through Calgary and Edmonton was more severe—that higher standards were set—than at Winnipeg, and this operated to the disadvantage of the producer and against the port of Vancouver, by sending grain east, where it was claimed the grading was easier.

Complaints were made also against the grading and setting of dockage at country points by country elevator operators. This, of course, is not official grading, but it is the basis upon which about 50 per cent of the grain is bought at primary markets from the farmers who sell their grain by the wagon-load as "street grain." Evidence showed that country elevator operators grade high and dock heavy, or grade low and dock light according as they require to use these devices for winning the favour of a customer.

The principle upon which the official grading of Canadian grains is based is that once a parcel of grain is given a grade, there shall be no alteration of that grade. But we heard many complaints from the millers of Eastern Canada at Montreal and Toronto, that would indicate that this principle does not hold. Both wheat and oats have been delivered to them on Canadian Certificate Final that were inferior and below the grade purchased and below the grade specified on the certificate. The moisture content was above the average, the screenings amounted at times to as high as $1\frac{3}{4}$ per cent and the wheat itself was inferior in quality, owing to the presence of frosted, bleached and sprouted berries.

And the millers of the Old Country made similar complaints, viz.—that one, two and three northern wheats from all Atlantic ports are not as good as they were pre-war. Moisture is higher, yield of flour is less and quality of gluten is lower. Especially is the quality of the wheat lower on receipts from January to July, as compared with October to December. Mr. Kennedy, wheat buyer for the Washburn Crosby Milling Company of Buffalo, in his evidence before us, cited three instances within a short period, where the grading out of Fort William was too low. The first case was a cargo on SS. *W. P. Snyder*, 300,000 bushel, No. 1 northern, bought C.I.F. Buffalo. It was left in store till March and when unloaded out, there was some No. 1 Northern, some 3 Northern,—an average between 2 and 3 Northern. The second was a cargo of No. 3 Northern on SS. *Pollock*, August, 1922. It turned out to be 4 tough and 4 northern. The company took this case to the courts fraud was proved and they were allowed \$38,000 damages. The third case occurred October 9, 1923. The company's agent called for reinspection on a part cargo of 50,000 bushels No. 3 northern on SS. *Grand Island*, and was allowed 1 per cent dockage, which meant a difference of \$500 in the company's favour. Mr. Kennedy thought the inspection out was at fault. He claimed that the moisture content was increasing, and would ultimately have the effect of depressing the price on better grades of wheat.

The opinions expressed and the evidence adduced before us indicates something of the measure of importance that attaches to the inspection and grading department that passes upon the Western Canada grain crop. The welfare of the producer is inseparably bound up with the miller in home and foreign countries. Theo. D. Hammatt, in Foreign Affairs, September 15, 1924, says: "Canada's foreign markets are all important to her as the quantity of wheat she must sell abroad far exceeds the amount she consumes at home. In 1922-23, eighty-five per cent of her wheat crop was exported as grain and flour." The confidence of the foreign customer must be maintained, and the responsibility for doing this is placed upon Canada's Chief Inspector of grain in Winnipeg. Can he measure up to this task under present conditions?

After hearing the complaints against sampling and grading, we examined carefully into every detail of the system in Winnipeg, Fort William, Port Arthur and at other points. At Winnipeg, we went to the Canadian Pacific Railway yards, saw the facilities for sampling the cars, and saw the crews at work, taking the samples, identifying, lifting, collecting, recording, checking off and packing in boxes to be transferred to the inspection room.

At the entrance to the railway yards, there is a small building situated not far from the yard office of the railway company. It is known as the yard office of the inspection department. A superintendent has charge of it, and is responsible for the work of sampling the cars of grain on the arrival trains. He has under him foremen, samplers, seal-breakers and door-openers, clerks and carriers for bringing in the samples.

When a train arrives in the yard, a clerk goes to the yard office of the railway company, and, from the conductor's papers, makes out a train list for the samplers, showing train, number of cars—full and empty,—time of arrival, date, and name of conductor, in addition to initials and number of car, contents, origin, destination. With this list, the sampling crew, consisting of a foreman, a seal-breaker and door-opener (in charge of the train list), and two samplers proceeds to the head of the train and starts work. The seal is broken, and the door opened by means of a steel bar by one of the crew, whose business it is to do it.

The sampler, with the aid of a ladder, enters over the grain door, levels off the grain near it, and spreads across a canvas about 30 inches wide and 66 inches long. He has an implement called a probe. It consists of two brass tubes, one fitting securely within the other. The outside tube is finished with a cone-shaped point an inch and a half long. In the tube there are eleven compartments, $3\frac{3}{4}$ inches in length and $\frac{3}{4}$ -inch in width, with a separation of $2\frac{1}{2}$ inches between each. The probe is 63 inches in length from the point to the top of the eleventh opening. A handle is fitted on the end of the inner tube, so that it may be turned, to close and open the compartments. The total length of the tester is 69 inches.

The sampler has instructions to take seven probes from a car of wheat, and nine from oats, in such places as will reveal the quality of the grain and the condition of the load. The probe must be closed and driven as nearly straight down as possible to the bottom of the car, the handle turned to open and allow the compartments to fill with grain, closed, and withdrawn. He empties the contents on the sheet at the door, handle to the left, and so on till seven probes have been taken in various parts of the car. The sampler, in addition to the probes, measures the height of the grain in the car at highest, lowest and average points, and notes whether there are indications of leaks.

In the meantime, the foreman—lifter—is making a record of the initials and number of the car on a small piece of cardboard—"chip"—5 inches long and about $1\frac{1}{2}$ inches wide. He climbs the ladder in time to see at least two of the probes being taken. He examines the probes separately and then mixes all carefully, and fills a bag with $2\frac{3}{4}$ to 3 pounds of wheat, making sure that it is representative of the car load. He then completes filling in the "chip", which now has at the top the car initials and number, and below this the date. Near the bottom, he draws a line to indicate the load line, and marks on it the depth in inches. If the car is unevenly loaded, this line will show it. The initials or name of the sampler are placed on the bottom of the card, and the name of the foreman is written on the back.

All particulars in respect to the carload of grain are on the face of the card, which is now shoved down into the bag and the mouth of the bag closed by means of a loop string. The bag is hung on a bolt head on the outside of the car. Each car is treated similarly. In case a car door cannot be entered on one side, the door opposite will be opened. Frequently it happens now that cars, especially oats and flax, are filled too full for the sampler to take the required

number of probes. In such cases, he takes as many full good probes as possible, and indicates the number on the card as "hold full, 5 good". In case a car is so full that the sampler cannot enter, he pushes the probe in from the ladder, and marks on the card, "hold full, ladder sample", with depth of grain in car.

It happens now and again that a "plugged" car arrives in the yards. A "plug" in this sense is a portion of inferior grain or screenings buried in some unsuspected place in the car, and covered with good grain. The sampler probes every car as if it were plugged and if he discovers one, he must take enough probes to arrive at the length and depth and width of the plug. This must be indicated on the ticket. In the case of a plugged car, three composite samples must be taken and preserved for inspection — one of the good grain, one of the plug and one of the average of good grain and plug.

When the car opener has completed the opening of all the grain cars, he returns to the head end of the train. He carries with him a set of seals, numbered serially. He closes the doors in the order of the appearance of the cars on his list, and seals them. The bags are picked up by a carrier, and taken to the inspection yard office.

The bags are set upright on a table, and the ticket pulled up about $\frac{1}{5}$ its length, so as to expose the car initials and number. A clerk reads the initials and number on the office train list, and a sampler checks off each ticket to make sure that a sample has been obtained from every grain car in the train, and to ensure against errors. The ticket is left exposed.

The clerk then fills in a large sheet from the train list, giving the car initials and number, the point of shipment, the destination and the name of the party to whose order the certificate is to be made out. Underneath this sheet, and separated from it by a carbon copy is a similar sheet on which is copied only the car initials and number. When this is done, the bags are checked off with these lists, the tickets pushed down into the grain, the mouth of the bag closed with the loop string, and the bags placed standing in a heavy wooden box that will hold 23. Each box is numbered. The lid is closed, but not locked. The boxes and lists (each list containing space for 43 cars) are collected morning and afternoon, and transported by dray to the inspection department in the Grain Exchange building in the city. The lists are delivered to the office, and the boxes to the inspection room. The deputy who is to inspect and grade the contents of a box is handed the carbon list, giving only the car initials and number. In the proper columns he will enter as soon as they are ascertained the weight per measured bushel, the grade, dockage and the depth of the grain in the car, and remarks as to evidences of leakages, if such are present.

We have outlined the method of sampling in the yards, identifying and recording the samples, preserving their identity, transporting and placing them in the hands of the deputy inspector, thus in detail to show with what care the system has been worked out by the department, in order that a sample as nearly representative as possible of the carload may be obtained, and that the ownership and other particulars as to the grain be unknown to the samplers and to the deputy inspector. We went to the railway yards, and saw every detail of the work carried out, and we employed a detective for some time to watch the work of sampling, to discover, if possible, any weaknesses in the system.

The actual work of making the probes in a car of grain is not easy. It requires a young, strong, active man of medium stature, who can accommodate himself easily in the small space between the top of the grain and the hoof of the car. It requires strength to push the probe to the bottom of the car. In addition, the man must be thoroughly honest and reliable. Any failures in the workings of the system are due entirely to the failure of the man. The evidence shows that now and again a man has proved unfaithful to his trust, usually through sheer laziness. Instead of making the stabs vertically, he would make them in the easy way through the unpacked grain.

No case of a sampler having been approached to substitute samples or anything of the sort was brought to our notice. Only a very limited number out of the many who have been employed have been dismissed for cause. It may be pointed out here, that it is from the ranks of the samplers that the promotions in the service take place. The present chief inspector and the assistant chief inspector were at one time employed in this capacity.

Inasmuch as the sample is the keystone of the arch of Canada's grain grading system, we cannot urge too strongly the importance of having in the employ of the inspection department a thoroughly honourable and capable staff in the sampling branch of this work. The confidence of the producer and of the purchaser of the grains in the sampling must be established and maintained. The condition of employment and service, and the nature of the work are such as render it impossible for any but those in immediate charge of the work to select men for the positions or to lay down conditions under which they must work. The salaries must be such as will attract men of character and responsibility. The conditions under which the men work are often very trying. They go on in shifts of eight hours each, and the work is carried on continuously, 24 hours a day, 7 days a week, and 52 weeks a year. The men must go about their work in winter and summer, in cold and darkness, and must be trusted at all times to produce a sample that can be relied upon.

It was proposed to us that a duplicate sample system should be set up to act as a check and a safeguard. We are unable to make such a recommendation. The duplicate sample would have to be made by men who would be subject to the same errors or misdemeanours as those who are now doing the work. In case of a discrepancy, it would be a question as to who had made the slip. It was urged that in case a discrepancy were discovered at Winnipeg, an appeal for a reinspection could be made in time to have the car sampled at Fort William. Again, it is pointed out that at present, when a car arrives at Fort William, notice is there in advance as to the grade the grain has received at Winnipeg. The deputy in charge of unloading scrutinizes the contents carefully to see that no mistake has been made. A duplicate system would only cause unnecessary delays, create confusion, and add to the expense without effecting improvement.

Hold full cars.

The railway companies have, during recent years, not only increased the size of grain cars, but they have strengthened their construction so that they may be loaded much higher than was possible a few years ago. This, together with uneven filling by elevator operators has made it impossible for the samplers to take probes in many of the cars arriving in the yards. From the first to the tenth of December, 1923, "hold full" cars arrived in the Winnipeg yards as follows:—

	Canadian Pacific Railway. Per cent.	Canadian Northern Railway. Per cent.
Wheat..	32	18
Oats..	41	37
Barley..	33	28
Rye..	24	28
Flax..	26	18

As was explained above, the sampler takes the best probes he can, and a provisional certificate is issued in Winnipeg. But the car goes on to Fort William, and there a sample is secured either when the contents are running from the car to the pit, or when the grain is running on the belt. On this sample, the final inspection is made. In case the inspector at Fort William thinks the grade should be changed, the provisional certificate issued at Winnipeg will be destroyed and a new one made out. If there is no change made in the grade, the provisional certificate stands, and settlement is made on it. In case the

grade at Winnipeg is not satisfactory to the owner of the grain such a carload may be "special binned" until an appeal or survey has been made.

These "hold full" cars give rise to some complaints on the part of owners who live long distances from Winnipeg. They hold that they do not receive word as to the grade or condition of such a car until it has passed on into the bins of the terminals, when in case of dissatisfaction it is too late to call for reinspection. It should be pointed out in this connection, that the number of "hold full" cars could be reduced to one-third their number, if those who fill would "trim"—level—them off properly. It is the business of the commission man handling the car to look strictly after the interests of his client. We were told that this is done. The shipper can take additional precautions by noting, on his instructions to his agent, the grade and dockage he thinks he should be assessed. He may order the car load special binned in the terminal, to enable him to make an appeal in case his expectations are not reached in the matter of grade.

Sampling cargoes.

When grain is loaded into boats or cars from terminal elevators, there is what is known as "inspection out". In order to make this inspection a sample of the lot, whether it be 1,000 bu. or 50,000 bu., must be taken. If the grain is being loaded out of a public terminal, the grain is sampled twice—once on the belt as it is running from the bins to the shipping bin, and again as it is running from the spout into the hold of the ship. A sampler stands on the deck of the vessel with a pail and a dipper. With the dipper he catches portions from the stream at short intervals, and empties them in the pail. They are examined frequently enough to ensure that the grade specified is being loaded. In the case of private terminals, only one sample is collected, viz.—that on the deck of the vessel from the stream running into the hold just as in the case of the public terminal, except that in addition to inspection, the grade of the cargo is set on the sample so collected just as is done in the case of car lots at an initial inspection and grading point such as Winnipeg, Calgary, etc.

INSPECTION, GRADING AND SETTING DOCKAGE

The Inspection Staff comprises a chief inspector, and assistant chief inspector, first deputy inspector and twelve to twenty deputies. The deputies do the actual work of inspecting and grading the samples. The first deputy and the assistant chief inspector act as supervisors and give such assistance as is necessary. The chief inspector has direction of all the service and the responsibility for the grading of Canada's grain crop rests upon him. He makes up standard samples of the various grades of grain as soon as possible each season for the use of the inspection office and for foreign buyers. All appeals for re-inspection are made to him and his assistant. In addition to this staff there is a Survey Board—a court of last appeal on inspection and grade. This will be dealt with later.

The inspection is done in a long room with ample window space along the north side. The deputy receives his box of samples and the corresponding sheet giving the car initials and numbers. He sets his samples out in order on the table facing the window.

Weight per bushel.

The weight per measured bushel is arrived at by taking a portion of the uncleaned sample and weighing it in a regulation tester. The weight is written on the pastboard ticket that accompanied the sample from the car. The uncleaned sample is used so that in case a claim should be set up for any cause this information would be available. If the weight should later be an important factor in establishing the grade it would be taken on a cleaned sample.

Setting the Dockage.

Dockage is the amount of foreign material that must be removed from grain to render it "commercially clean". In order to arrive at the dockage the deputy weighs out 500 drachms from the sample and cleans it by means of various devices—"kicker" for wild oats and sieves of various sizes. A "kicker" is a machine consisting of a number of slanting screens, one below the other, within a wooden frame, so arranged that they can be agitated by the turning of a crank. The sample is fed into the top of the machine, the crank is turned, and the grain in sliding over the screens is separated, the oats being spouted off into one pan and the other grain flowing through another spout into another pan. The holes in the sieves are of such sizes and shapes that other material, cracked wheat, buckwheat and other seeds may be separated by shaking the grain in them one after another. The total screenings are weighed in the scale, the beam of which is so graduated that the percentage can easily be arrived at. The percentage of dockage is indicated in its column on the deputy's sheet.

Inspecting and Grading.

On a large sheet of brown paper placed on the table before the window the sample is divided into nearly equal parts, one part has been cleaned for the purpose of setting the dockage and for fixing the grade. This portion is spread out on the half of the sheet immediately in front of the deputy and the other half of the sample on the back part nearer the window. The inspecting is done on the cleaned grain. The wheat will fall into one of the five main classes described in a preceding paragraph. In coming to a decision as to what grade shall be given he must make observations that will give him information as to its quality, condition and admixtures (other grains and material that cannot be easily separated).

Quality to the miller means strength and yield of flour with whiteness, bloom and flavour. To the deputy there must be some visible signs of this quality. They are weight, soundness, colour, brightness, plumpness, thinness of bran, freedom from odours and particles of smut. The deputy must carry in his mind accurate standards as to these attributes. Colour alone may make a difference of several grades. He handles the grain to judge of its condition whether it is dry, tough or damp. It must be fit to warehouse. If he is in doubt as to the moisture content and wishes to confirm his judgment he asks to have a test made. This is done by means of a sensitive apparatus that is in use in the United States inspection department as well as in Canada. The admixtures can be easily detected by the eye. If the case is at all in doubt as to these he mixes the sample well, takes out a portion and makes a count. On these observations he bases his judgment and fixes the grade. He records it in its proper column on his sheet.

Now in case he is in doubt about the grade he should place upon it he may refer (1) to a standard sample of the minimum (as nearly as possible), of the grade kept in a tin box on the window in front of him (2) to another deputy (3) to the first deputy or to the assistant chief inspector. All of this must be done quickly.

During most of the rush season the light for inspecting grain is suitable only between the hours of 8 a.m. and 5 p.m. and for quite a period from 9 a.m. to 3.30 or 4 p.m. Carloads are passing through Winnipeg at the rate of over 2,000 a day. A deputy with a helper, can inspect about 200 to 250 cars per day. The evidence is that all "line" samples of grain, that is, grain that might, in the opinion of the deputy, be just at the top of one grade or at the bottom of the next grade above is given the benefit of the doubt and placed in the higher grade. If there were a high proportion of such cars this would have a depressing effect upon the average standard of quality of the higher grade. But the fact is that the grain is given the benefit of the doubt without exception.

When the grade has been finally fixed and recorded, the grain and screenings are thoroughly mixed and put in a tin box with the pasteboard ticket that has followed the sample from the car. In a slot in the end of the box a card is placed bearing the date and the grade, car initials and number. This box is filed away in the sample room for reference. When the deputy has completed the last of the samples and recorded his findings on the sheet he will have noted opposite each carload the grade, weight per bushel, dockage, moisture, if tested, and depth of grain in the car, in case of a claim being made.

The deputy's sheet is handed in to the office where the certificates are made out, and the particulars as to weight, grade, dockage, etc. copied on the larger sheet that came from the yard office. A similar sheet is made out and sent by fast mail service to Fort William for the information of the inspection branch there, in order that a check may be had upon the grain when it is being unloaded.

Up to the time of filing away the sample and sending the sheet to the office, the deputy has no knowledge whatever of the ownership or origin of the cars of grain that he has been inspecting. But when the work of inspection is over for the day, he and another deputy get from the inspection office the lists and the completed certificates, and check them off just to see that no errors have been made.

Should doubt arise in the deputy's mind as to the correctness of a grade, he could at this time go to the sample room, get the sample, and, if he thought advisable, change the grading and have a new certificate made out. It was pointed out by a witness that such a thing might happen, but he had never known it to happen. We are of the opinion that this practice of checking over by the deputy should be prohibited. It serves no good purpose, and only gives grounds for suspicion and distrust. This work can, and should be done by the clerks who are charged with this responsibility.

The Certificates.

The certificates are at once distributed. Some go to the country, but most of them are taken to the office of the agent of the shipper. As soon as possible, usually the following morning, the agent takes his certificates to the sample room and asks an attendant there for the samples corresponding to the certificates. He examines them carefully, in order to safeguard the interests of his client, and notes on the back of the certificate the reasons for the grading. If he thinks a sample should have a higher grade, he places the box with the certificate on a window opening into the sample room, where it is taken by the Chief Inspector and reinspected. If the agent is still dissatisfied, he makes a final appeal to the Survey Board through its secretary. The judgment of the Board is final.

The sample room has space to accommodate about 60,000 samples. During the rush season the samples may be kept not longer than three weeks. A farmer or any owner of grain may go to the inspection department, and ask to see the sample representing his carload and receive explanation as to the grading. Many take advantage of this privilege.

The sample room is made use of to a small extent by representatives of milling companies for the purpose of selecting cars that are suitable for their needs. This is the nucleus of a sample market, and takes place in this way, owing to the absence of such an institution in Winnipeg.

The wheat that accumulates from the samples is sold to one of the milling companies. Other grain is disposed of to the best advantage, and the proceeds of sales are deposited to the credit of the Dominion Treasury. The producer, miller, exporter, importer and financial institution must have implicit confidence in the grading system and in the manner in which it is carried out. The importance of the grading of Canada's grain cannot be overestimated.

Official grading of the producer's grain in carload and part carload lots takes place at Winnipeg, head of Lakes on "hold full" cars, Calgary, Edmonton, Vancouver on "hold full" cars, Moose Jaw, Saskatoon and at mills west of Winnipeg. It is all under the direction of the Chief Inspector at Winnipeg. It is intended to be done as uniformly as possible. A No. One Northern wheat at Winnipeg or Fort William should be a No. One Northern at Calgary, Vancouver, Edmonton or Saskatoon. It is one system. If there is any variation in the grading at the several points, it is due principally to the variety of judgment of the men doing the work. Greater uniformity can be obtained where the inspection staff are working together under close observation and supervision. There are two potent forces operating to influence the grader. The producer's interest on the one hand, and the interest of the purchaser of the grain on the other. If he pays attention to either, he will surely go wrong. There is only one course. He must grade the grain according to the standards laid down for his guidance.

It was impressed upon us that the deputy who passes upon the sample and fixes the grade plays a very important and necessary part in the merchandizing of Canada's grain, and that he should be well qualified to hold such a position. Fitness for the work should be the prime and only consideration in making his appointment. It is absolutely essential that a person to qualify for the position of inspector and grader should possess full knowledge of the specifications of the grades, a knowledge of the uses of grains, quick and accurate powers of observation, the ability to make quick and accurate decisions, and in addition he must be reliable and temperamentally suited for doing exacting work of this kind.

All deputies and inspectors must pass a rigid examination according to the requirements of the Canada Grain Act. But a man may pass the examination and yet be quite unfit to inspect and grade grain. For example, a man with all the knowledge necessary, but slow and indecisive would be useless.

The work of the office staff cannot be overlooked. Upon it, rests the responsibility of making out the lists, certificates etc., of getting them off with despatch, and without error, and of keeping accurate records. The work of the inspection office is not like ordinary office routine. The grain is moving through Winnipeg at the rate of 2,000 to 2,500 cars a day. No part of the system can be allowed to fail. Those experienced in the work should be retained, if possible, from one season to another.

Now that the inspection work is so scattered, the chief inspector should be free to visit each point frequently in order to ensure the greatest care in the taking of samples, accuracy and uniformity in grading, reliability in the records and promptness and accuracy in getting out the certificates and lists.

Inspection and Grading Out of Terminals.

There are two kinds of terminal elevators—the public and the private. The public elevator receives grain for storage purposes. In doing this, it performs the following services: unloads the grain into a pit, elevates it to a garner, weighs by a Government weighman, bins according to grade, cleans as specified by inspection department, stores, insures and discharges into a car or the hold of a ship. The carloads of No. 1 Northern wheat taken into the elevator are, it is fair to assume, representative of all the variations that can fall within the latitude of the grade, i.e., between the minimum and the maximum requirements. The contents of a bin in the process of unloading, cleaning and moving to the scales and shipping bin, become thoroughly mixed, and produce what may be termed the "average" No. 1 Northern into the public terminal, or what is known as the "country run" of the grade. It is expected that every precaution will be taken to see that the identity of a particular grade of grain is preserved in the public terminals, so that the average out shall

be the same as the average in. Samplers of the inspection department are stationed in the tunnels of the public terminals where they catch from the conveyor belt samples of a grade as it is running to the scales to be weighed out. An inspector is present as well. The samples are inspected at frequent intervals to make sure that the grain is of the specified grade called for, and that it is "commercially clean"—bearing less than one per cent of dockage. And again, as outlined previously, a sampler catches a sample as the grain is running from the spout into a car or the hold of the vessel, and inspects it to ensure that the grade is that which is specified for loading. This is called "inspection out" of the terminal.

The private terminal deals largely with its own purchased grain. A private "regular" may also store grain for others. The grain being shipped out of a private terminal is sampled from the stream as it falls into a car or the hold of the vessel. The sample is taken to the inspection office and graded. The standard sample fixed for grading of grain out of private terminals is one that is made up in such a way as to ensure that the average sample out of these houses is as good, in so far as can be judged by the eye and the scales, as the standard sample made up by the Chief Inspector. The inspection department has interpreted, rightly or wrongly, section 99 of the Canada Grain Act to apply to these houses, and the deputies have been instructed to grade according to a composite sample made up by the inspector in charge of terminals at the head of the lakes, as follows: 3 parts standard sample as made up by the Chief Inspector at Winnipeg, and 1 part of the average of the grade out of public terminals. At each terminal elevator, an office and inspection room with all necessary equipment has been provided. The samples from the cargoes are taken to it, graded, and then taken to the inspection department in Fort William and filed away in the sample room for future reference.

During the grain shipping season, it happens that boats are being loaded throughout the whole twenty-four hours, during the night as well as the day. With the aid of lanterns or other artificial lights, samples are obtained during the hours of darkness. These, however, cannot be examined until they can be seen in proper light the following day, when inspection and grading takes place.

All grains inspected out of the terminals at the head of the lakes, Vancouver or from the interior terminals, should go out carrying no dockage. They should be "commercially clean." We found, however, that there have been times when, owing to the rush of grain through the terminals, the cleaners were not of sufficient capacity to do the work and the inspectors at the terminals let it pass the grade with the dockage assessed and shown on the certificate. This is contrary to the law, and should not happen in connection with either public or private houses.

When the inspection is completed and the grade assigned, a Certificate Final is issued covering all the grain in a particular hold or in a part hold where two grades are sometimes separated by canvas. This certificate final makes necessary the preservation of the identity of the grade throughout its course in vessel, through transfer house or houses, in cars, in ocean-going ships, and on through the process of discharge, transfer and carriage of one sort and another until it arrives in the bins of a mill in the importing country. It is on this piece of paper that the purchase is made, and the financing done, hence the necessity for all the care to ensure that the article it represents, the Canadian grain, conforms as nearly as possible, to the definition of the grade which it purports to be.

The Definitions of the Grades.

It is very important in the interests of continuity of the quality of the grades, and for the better understanding of their requirements by the producers

and by the millers and users of grain, as well as the trade generally, which is every year expanding and extending into new markets, that the statutory grades of Canadian grain and also such descriptive terms as colour, soundness and dockage be more clearly defined. When discussing dockage, the terms foreign material, other grains, cracked kernels, etc., were all used, and apparently with much confusion. These terms, as well as others commonly used in relation to grains, should also be defined and made clear as to their meaning and application.

Both Chief Inspector Serls and his assistant, Mr. Fraser, suggested that a great service could be done through a redefinition of the statutory grades *only*, for the sake of clarity. And it must be clearly understood that in doing this there shall be no alterations that would lead to any lowering of the present status of the grades as understood by those engaged in the inspection, grading and merchandising of the crop.

Bleached, Sprouted and Frosted Wheat.

Much time was taken up at Winnipeg in the presentation of a case in respect to the qualities of blached, sprouted and frosted wheat. There are, of course, all degrees of these afflictions in the wheat crop of the prairies, varying with seasons. Investigations have shown that the effects of bleaching and sprouting in this grain are very similar, as shown in the faster working of flours produced from them, varying, of course, according to the intensity of the action, and that the effects produced in the flour from frosted wheats were almost exactly the opposite of these.

Slightly bleached and slightly sprouted were terms used to describe slight effects from these causes, and it was argued that because these wheats were nearly as good as Nos. One and Two Northern, they should be put into these higher grades. These wheats have lost their colour, and other marks that indicate strength to the miller and to the trade, and it matters not how good they may be, the uncertainty as to their quality makes it necessary for the miller or trader to buy them on a wider margin. If it were permitted to put them into the higher grades, their presence there would affect the appearance, and have a depressing effect upon the price. If, on the other hand, these wheats were offered on a sample market, where their intrinsic values are known or could be easily ascertained by chemical and baking tests, there is no doubt in our minds but what their true value could be realized.

It was urged, too, that in the case of No. Three Northern wheat, commonly known as the inspector's grade, it might with advantage be changed by keeping frosted and bleached wheat apart. Frosted and bleached implies that the action of the weather has been more intense than in the case of slightly bleached and slightly frosted. If these classes of wheats were produced in large enough quantities to make it possible to merchandise them separately without economic loss, then this suggestion might be entertained and acted upon. It would appear, however, that under present conditions this is not the case, and that the best interests of the producers are served by allowing the grade to stand with perhaps minor changes that would make it more uniform and more valuable to the miller. But in this too, as in Nos. 1 and 2 Northern there must be no lowering of quality for this grade is deliverable on contract and any change made should be to render it more dependable and lessen the risks in buying it. Any change made should be such as would improve its price getting qualities.

Grain Survey Boards.

Under the provisions of the Canada Grain Act the Board of Grain Commissioners have, and do exercise the power of appointing a Grain Survey Board for each inspection division whose duty it is to hear appeals from the grading of the Chief Inspector. The candidates for appointment to such boards are

nominated in the Eastern Division by the Boards of Trade of Toronto and Montreal for their respective cities and by the Boards of Trade of Winnipeg, Calgary and Edmonton and the Minister of Agriculture of the provinces of Manitoba, Saskatchewan and Alberta for Winnipeg and Calgary in the Western division. It is stipulated that a nominee shall be a fit and proper person, well qualified to pass upon grades of grain.

It is but natural that such persons would be looked for among the men active in the grain trade or those who have dropped out of it for various reasons. It is scarcely necessary to point out the undesirability of this system. These men have not qualified as inspectors of grain. They have, it is true, a knowledge of grain from the trader's standpoint, but they are interested in buying wheat in carloads and they are interested in selling wheat in cargo lots. It is quite true that the men sitting on the appeal board do not own the grain in question but that does not affect the anomaly of the position in which they are placed when asked to alter or sustain the judgment of Canada's Chief Inspector.

It is apparent that a change from this method of making an appeal was considered desirable for in 1919 certain sections were passed by Parliament to replace sections 100 to 104 of the Canada Grain Act to come into force upon a date to be prescribed by proclamation. No proclamation has been issued up to this date. These provide for a Board of Grain Appeal to consist of three members who must be expert and experienced in the inspection of grain to be appointed by the Governor in Council. When this plan was contemplated Winnipeg was the only point in the Western Division that was affected. With the opening up of new ports and the development of new trade routes a number of such boards would be necessary. It would be very difficult indeed to secure three capable men for one board without having to provide them for perhaps three or four such boards. There are appeals on only a very small fraction of the inspection so that the cost of the system would be entirely out of proportion to the services rendered. It looks too, as if it contemplated removing the appeals from the inspection department and this, it appears to us, is wrong in principle. We are in favour of placing upon the Chief Grain Inspector for Canada the whole responsibility of grading and of maintaining the integrity of the Canadian Certificate Final. It is with this end in view that we recommend the doing away with the present Grain Survey Board and with the idea of the Board of Grain Appeal as contemplated in the Amendments of 1919 referred to above and that the Chief Inspector's staff be organized in such a way as will enable him to carry out the following:—

- (1) Inspect and grade incoming carloads and outgoing carloads and cargoes;
- (2) Hear appeals from first grading;
- (3) Hear final appeals that were formerly heard by the Survey Board.

We suggest (1) that the first inspection and grading be done by a deputy as at present; (2) that an appeal be heard by a deputy who may be designated an "Appeal Inspector" or/and (3) that an appeal from an appeal inspector's grading be heard by a Board of Grain Appeal consisting of three qualified persons—an inspector and two deputies. Should two deputies not be available any two competent persons who might be designated by the Chief Inspector as eligible, to serve on such a board.

The advantage of this plan would be that the sample of grain would be graded each time by thoroughly qualified men who know the standards and are capable of observing and judging grain. In the case of a final appeal it would come before three so that the sample would have the advantage not only of the careful judgment of trained men, but of differences in judgment, if there were room for such, of three capable persons.

We desire to emphasize that the responsibility for the final appeal should rest upon the Chief Inspector.

No. 1 Manitoba Hard Wheat

We recommend that the grade known as No. 1 Manitoba hard be eliminated from the list of grades set out in section 107 of the Canada Grain Act. Grain of this grade has ceased to be dealt with in practice and it should be merged in No. 1 Northern.

TRADE NAMES

The Trade Name of Canada's Hard Red Spring Wheat

For many years Canada's hard red spring wheat has been traded in under the name of Manitoba Northern; the statutory grades being designated as No. 1 Manitoba Hard, No. 1 Manitoba Northern, No. 2 Manitoba Northern and No. 3 Manitoba Northern. A "trade name" or "brand" when it has become established in commerce stands for all the attributes of the particular commodity which bears its name. The longer the name is in use, provided the thing for which it stands is maintained at a high standard of excellence the more sacred and the more valuable the name becomes.

Oats, barley and flax grown in the same area as the wheat are traded in under the name of Nos. 1, 2 and 3 Canadian Western. Up to 1912, the Act governing the grain trade was called the "Manitoba Grain Act", but in that year the name "Canada" was substituted for "Manitoba" in the Canada Grain Act.

At various times throughout the years, the wish has been expressed in many quarters outside the grain trade to have the name of the wheat from the prairies changed to one that will mean more to all the Western producers and to all the people of Canada. It has been suggested that the name "Canada" be substituted in full for "Manitoba" so that the grades would read—"Nos. 1, 2 and 3 Canada Northern."

During our sittings on the prairies, we canvassed farmers and men prominent in the grain trade as to the desirability of changing the name. Nearly all expressed the fear that if such a change were made doubts would arise in the minds of importers, financial institutions and others who deal in Canadian wheat. While we do not wish to make any recommendation in this respect, we do wish to point out that we are of the opinion that the maintenance of high standards of quality in grades of Canadian grain is of greater importance than the name under which it is merchandised.

NEW GRAINS

We have emphasised in another place the importance to the farmers of sowing pure clean seed of a recognized good variety of grain. The farmer is being exploited continually by amateur plant breeders and expert salesmen, who are dabbling in grain for the sake of notoriety or financial gain, without any sense of responsibility in the matter of maintaining the reputation of Canada's grains on home and foreign markets. Many disappointments come to the farmer as a result of these practices. The quality of Canada's export grain products is lowered through the use of poor seed, either by itself or in mixtures.

We are of the opinion that this question of seed, especially wheat and oats, is sufficiently important to Canada to warrant the Government in taking such measures as will reduce to a minimum the practices noted above.

RESEARCH

We are impressed with the great need for research work to be carried on for the promotion of our grain growing and milling industries. The keeping

up of the quality of wheat alone is of immense importance. Our excellent position in the better export markets of the world can be held only if we guard the quality of our grades. Commissioner Rutherford reported that in the Old Country extensive provision has been made for carrying on investigation and research in connection with wheats, flours and milling, with special attention given to the content and quality of gluten.

When we were in the United States, we visited two well-equipped laboratories for carrying on investigations in respect to wheats and milling, viz.—at Minneapolis, where the State has a 125 barrel mill and other splendid facilities, and at Manhattan, Kansas, where the State has made excellent provision for carrying on investigations in respect to questions relating to wheats, milling, baking and flours.

Canada is now in the position of being the largest exporter of wheat in the world. Not only is she the largest exporter of wheat, but the largest exporter of the world's "best" hard wheat. Her wheat growing area is exceedingly large comprising many soil type areas and is affected by a variety of conditions moisture, soil, rust, disease, hot winds etc. that change the character of the crop by districts every year.

There are also the questions relating to moisture content for warehousing, the methods and technique of moisture testing, and many other problems, all of which have a direct bearing upon the successful marketing and merchandising of Canada's annually increasing exportable surplus of grain crops as well as those questions relating to the milling industry.

The inspection department should have the advantage of a laboratory with a well-trained staff to render assistance in the matter of grading in addition to careful research that should be encouraged in the matter of improving and holding our position as a grain growing and grain exporting country.

SAMPLE MARKETS

The establishment of Sample Markets is provided for in section 57 of the Canada Grain Act. We deal with this subject in the chapter of the report on the subject of "mixing."

CLEANING AND DISPOSITION OF SCREENINGS

Screenings.

Screenings is the name that is applied to everything that may be cleaned out of a sample of grain. Weed seeds, cracked and shrunken kernels, other grains, straws, chaff, and various kinds of foreign matter such as stones, earth etc., are all included under this common term. Screenings vary in kind and quantity on different parts of the same farm, on adjoining farms, in different districts and in provinces. These variations are the results of soil and climatic conditions, diseases, insects and fungi, methods of farming and methods of gathering, threshing and marketing the crop. One sample of grain may contain only a trace, while another may have 3 per cent or more. A sample representing 25,000 bushels of wheat contained 7.4 per cent of foreign material, made up largely of weed seeds, wild oats, black bindweed, and lamb's quarters. A car flax had 16 per cent of its weight made up of weed seeds, one ounce of which contained the following: noxious—hare's ear mustard 73, stinkweed 106, wild mustard 1051, western false flax 429, round seeded false flax 170, tumbling mustard 1009; other kinds—lamb's quarters 152, cinque-foil 10, blackbind weed 14. In some districts, grain carrying 30 per cent screenings is not uncommon.

Wheat that is to be used for making flour requires to have all screenings of whatever nature removed before the process of manufacture can be started. Not only are the necessary mechanical separations made, but the wheat is washed, brushed and scoured, if need be, to make the operation complete. Rye for flour, durum for semolina, barley for pearling and malting, flax for oil, and oats for oatmeal must all be treated so as to leave only the clean grain of each kind to be used for its own particular purpose. Oats for horse feed are more valuable when freed from all foreign material whatever—weed seeds, other grains or dirt. Mixtures of other grains do not add to their value for this purpose. Wheat, barley or rye mixed with oats are likely to cause digestive troubles. All grains are more valuable on the world's markets when offered there as nearly pure as possible.

The Canadian grain grading system has taken account of this in the interests both of the producer who has grain to market in bulk and of the consumer who purchases it on the Canadian Certificate final. While the grain is on its way east or west to the terminals at the head of the Lakes, in the interior, or at Vancouver, it is sampled in the cars and tested in the inspection department to ascertain the amount of foreign matter that should be removed in order to render it "commercially" clean. The percentage set for removal is called "dockage". The Canada Grain Act specifies that the grain shall be cleaned in the terminal elevators to meet the requirements indicated on the inspection certificate, and that all grain passing out of them to the world's markets shall be cleaned in accordance with the definition of the grades in the Act.

Composition of Screenings.

The seed branch of the Federal Department of Agriculture carried on investigations in connection with screenings for a number of years, and in its report upon the work in 1915, it has the following to say:—

"Elevator screenings are so variable in composition that to get an idea of what on the average constitutes screenings, a composite sample representing thousands of tons should be examined.

"Following is the analysis of such a sample representing 6,000 tons of screenings from the 1912 crop, as shipped from various elevators at two or three different periods of the year from Fort William and Port Arthur to Buffalo, Chicago and Duluth:—

37 per cent scalpings,
7 per cent succotash flax.
18 per cent buckwheat screenings,
38 per cent black seeds.

"Scalpings consist of the larger grains and weed seeds in the screenings in the following proportions by weight: 65 per cent wheat; 25 per cent wild oats, flax, and barley; 3 per cent weed seeds (wild buckwheat, lamb's quarters, stickseed, ball mustard, prairie rose, wolfberry, great ragweed, cow cockle); 7 per cent straw, chaff, etc.

"Succotash flax is made up of 30 per cent flax; 40 per cent broken wheat; 15 per cent weed seeds (wild buckwheat, stickseed, lamb's quarters, wild oats, false flax, American dragonhead, lady's thumb, knotweed, sunflower, purple cockle, ball mustard, hare's ear mustard, hemp nettle, roadside thistle, prairie rose); and 15 per cent chaff, etc.

"Buckwheat screenings consist of 58 per cent wild buckwheat; 29 per cent wheat, oats, and flax; 9 per cent weed seeds (ball mustard, stickseed, wild oats, cow cockle, purple cockle, ragweed, stinkweed, hare's ear mustard, western false flax, Russian thistle, prairie rose); and 4 per cent chaff, etc.

"Black seeds are composed of the finer weed seeds separated from the screenings by the use of the 1-14 inch perforated zinc screen. This material contains about 45 per cent lamb's quarters; 4 per cent tumbling mustard; 2½ per cent wild mustard; 6½ per cent of other mustards (western false flax, hare's ear mustard, stinkweed, wormseed mustard, shepherd's purse, peppergrass); 8½ per cent other weed seeds (American dragonhead, hedge nettle, stickseed, green foxtail, Russian pigweed, sow thistle, catchfly, roadside thistle, Canada thistle, wormwood, cinquefoil, evening primrose, pale plantain, witch grass); and 33½ per cent dust and chaff."

SEPARATIONS

Screenings as they come from the separator, weed seeds, broken kernels, wild oats and other grains and foreign matter of all descriptions are called "elevator screenings." These are separated by a specially designed machine into three sub-classes or grades known to the trade as (1) Oat scalplings, made up largely of wild black oats, some tame oats and small percentages of other material; (2) standard recleaned screenings, composed of wild buckwheat and broken wheat largely with small amounts of other matter; (3) refuse screenings composed of black seeds, noxious and otherwise, and chaff, straw, etc. It is estimated that the oat scalplings and recleaned screenings constitute from 25 per cent to 45 per cent of the total run of elevator screenings, and these proportions vary according to the season and district. Screenings from one district may be nearly all small, black seeds, while from another cracked wheat, wild oats or buckwheat predominate.

Value of Screenings for Stock Feeding.

For a number of years previous to and during the war, elevator screenings from the head of the Lakes (Fort William and Port Arthur) found a ready market in the United States, where they were used very largely in the vicinity of Chicago and St. Paul for feeding and finishing sheep and lambs from the ranges. The small black seeds were used as a base for the manufacture of stock foods. During the war, a strong demand arose in Canada for screenings as supplementary feeds for greater production of live stock. In 1914 and 1915, the Dominion Central Experimental Farm conducted a series of experiments, with a view to arriving at the value of screenings, and finding out the best way to feed them to the various classes of live stock. The report upon the results obtained from these experiments carries the following advice:—

"In purchasing screenings or any meals such as patent meals; mill feeds, such as middlings, shorts and bran; or any other stock feed, do not buy any having black seeds contained therein. Black seeds are useless as feed, expensive as adulterants, and dangerous in spreading weeds.

"Screenings vary widely in composition. Before buying, send samples to the seed laboratory for analysis.

"Feeding screenings.—If the black seeds are not removed from the screenings, it pays to screen them out.

"Screenings free from black seeds may be fed freely to all classes of live stock. However, it is more profitable to have such screenings compose not more than 50 to 60 per cent of the total grain ration. Use such screenings as the basis, and add other coarse grains or meals to make the grain ration suitable for the kind of stock being fed.

"If fed whole, screenings with black seeds removed may be used to best advantage for sheep and horses. For swine, it pays either to grind or soak for twenty-four hours to increase the digestibility. For cattle, they should be ground and mixed with other grains, which mixture may be fed with cut roughage or separately as desired.

"If possible, to screen out the flax and wild buckwheat, these are very valuable as the basis of a good home-made calf meal. With the addition of oat and blood meals, such a pulverized mixture makes an excellent milk substitute.

"There appears to be danger in feeding flaxseed screenings."

At various points on the prairies, the value of elevator screenings with the black seeds removed was attested to by stock men who had used them extensively for cattle and sheep feeding. One, who fed 200 head of cattle for 60 days on recleaned screenings and hay, secured a gain of 120 pounds per head for that period. Others gave similar evidence. These men place a money value on such screenings at \$14 to \$16 per ton, when barley is worth \$20 per ton, and on oat scalplings a value almost equal to that of tame, feed oats.

The sheep feeders around Calgary and Lethbridge spoke highly of recleaned elevator screenings for sheep and lambs. Every year, large quantities are being used by the farmers of Ontario and Quebec, who appreciate their value as feeds. All who gave evidence before us recognized the necessity of having

the small black seeds such as lamb's quarters, pigweed, stinkweed and the mustards, removed. These are bitter. The mustards blister the tongues and mouths of the animals, and they render the rations unpalatable and most unsatisfactory, so far as producing gains are concerned.

Value of Refuse Screenings.

The fuel branch of the Mines Department carried on investigations to ascertain the fuel value of refuse screenings, and found that they were about equal, ton for ton, to low grade lignite coal, and would be worth about \$7 per ton for burning in furnaces of suitable construction. It was suggested that they might be used in connection with central heating plants in cities like Fort William and Port Arthur, where they accumulate in great quantities at the terminals and at present have to be dumped into the lake. Mustard seeds can be separated from the black seeds, and merchandised in quantities in the United States.

Representations made to the Commission, by Farmers, Feeders, etc.

During the sittings of the Commission on the prairies and at other places, we heard much about screenings. In the province of Alberta, both farmers and what might be called professional stock feeders—those who buy stock and feed them near the stockyards—expressed themselves strongly in favour of having screenings from Alberta grain made more easily available for those in the province, who needed them to feed to stock. It was urged at several places that interior terminal elevators at such points as Lethbridge, McLeod and Edmonton would help to solve the problem, in that grain passing through them would be cleaned, the screenings kept for local use, and a saving in freight effected. Some urged that country elevator companies be compelled to equip all their elevators with cleaners. It was felt by most farmers that cleaning grain on the farm was impracticable under present conditions—rush of work, high priced labour, short season and lack of equipment.

In Saskatchewan, the need for saving the losses that screenings entail in hauling, freight, elevating, storing, cleaning, etc., was keenly felt, as was also the need for reclaiming and returning them for feeding to stock. It was urged (not by farmers) that efforts should be made to have the farmers use the interior elevators at Moose Jaw and Saskatoon for storing and cleaning their grain. In this way, the screenings would be kept in the province, and the saving in freight effected. Cleaning on the farms, for any great number of farmers, was out of the question. Quite a number of witnesses, farmers included, felt that the only place to clean grain under present conditions is in the terminals.

In the province of Manitoba, at every point where the Commission sat, the screenings question was strongly in evidence. Manitoba's agriculture is changing, extensive wheat farming is on the wane, and is giving place to a more diversified agriculture, with live stock as an important feature. Weeds are very troublesome now, and the dockage is heavy. The chairman of the Manitoba Weed Commission, in his evidence, gave it as his opinion that Manitoba loses annually 25 to 30 millions of dollars through weeds alone. The farmers feel that the screenings should be kept at home; that the freight bill should be saved, and that the better part of the screenings should be fed to stock. Some approved of compelling the country elevator companies to put in the necessary equipment and to clean all grain, but few would go so far as to say that all farmers should be compelled to put their grain through the elevators and have it cleaned. Others favoured cleaning on the farm, thus saving haulage and freight.

The farmers of all three provinces are keenly alive to the screenings question, and are anxious to find the proper answer to it. None who had had

experience in the matter of having elevator screenings returned in bulk regarded it favourably. It was their opinion that such a practice should be prohibited.

In Ontario, the farmers have lodged complaints with three successive ministers of Agriculture against the importation of screenings from the western crops, on account of the noxious and other weed seeds they contain, and the consequent menace to Ontario agriculture. The screenings are shipped across the lakes in bulk to Bay ports and from there reshipped in cars in bulk to farmers' cooperative societies at country points. From there they are hauled away in loose wagon boxes. The seeds are blown about the railway yards by the wind. They leak out of the wagon along the roadside, where they grow and infest the neighbouring fields. When screenings are fed, unless properly ground or cooked, the seeds pass through the digestive tracts of the animals, germinate and grow in the fields, and become a menace to adjoining farms. The ability of weed seeds to distribute themselves in this way has been amply proven by investigations carried on at various experimental stations. Bulletin 168, of the Maryland station gives the following: A cow and horse were each fed two pounds of the unground grain screenings with middlings, bran and wheat straw each morning and night for seven days. On the evening of the seventh day, they were bedded with sawdust and the dung of one night collected. The sawdust and dung were thoroughly mixed and put in boxes, and set on a bench in the green house. The dung was collected on May 24th. On June 21st, the following seeds had grown:—

<i>Cow Dung</i>	<i>Horse Dung</i>
149 Lamb's quarters,	1,213 Lamb's quarters,
12 Pig Weed,	28 Foxtail,
14 Bindweed,	11 Pigweed,
4 Foxtail,	12 Bindweed,
2 Timothy.	6 Timothy,
	3 Clover,
	2 Morning Glory,
	5 Mustard.

In an effort to prevent the spread of weeds, the prairie provinces have enacted legislation as follows:—

LEGISLATION RESPECTING NOXIOUS WEEDS, THRESHERMEN AND OTHERS

SASKATCHEWAN

An Act Respecting Noxious Weeds, 1924. Chapter 40, Sections 21-24.

21. Every person in possession of charge of any threshing machines shall, before removing such machine or the wagon racks or any part thereof to another farm, thoroughly clean the machine both inside and out by the removal of all seeds and other crop refuse, and cause the wagon racks used in connection with such machine to be thoroughly cleaned and swept immediately after threshing. R.S.S. 1920, c. 167, s. 23, amended.

22. A card containing the provisions of section 21 shall be kept posted in a conspicuous place on the separators of threshing machines when in operation and shall be furnished free by municipal secretaries upon application. R.S.S. 1920, c. 167, s. 23, in part amended.

23. The Secretary of every municipality shall record a list, in such form as the minister may approve, of all the threshermen to whom cards were issued during the year and shall mail a copy of such record to the commissioner not later than the thirty-first day of December in the year to which it refers. New.

24. No person shall for a period of more than five days leave exposed or unprotected at or near any place where grain has been threshed any screenings containing the seeds of noxious weeds, nor shall any person place or leave exposed or unprotected, except in a securely constructed building or other closed container, any matter containing such seeds without having first destroyed the germinating qualities thereof. R.S.S. 1920, c. 167, s. 22, amended.

ALBERTA

An Act Respecting Noxious Weeds, 1907. Chapter 63, Sections 14-18.

14. (1) No person shall purchase or sell, barter or otherwise dispose of or remove from any premises, any bran, shorts, chopped or crushed grain, or cleanings containing seed of noxious weeds, unless the germinating qualities of such seeds have been destroyed; and no person shall at the time of marketing or warehousing his grain remove from any elevator or mill the screenings screened from such grain so marketed or warehoused and such screenings shall be burned by the proprietor of the elevator or mill;

Provided that matter containing seeds of noxious weeds may be removed in closely woven and securely tied sacks from any grain elevator or warehouse to be burned or fed to sheep if such sheep are fed and kept within enclosures which are the property of the feeders; and which shall be subject to inspection by weed inspectors.

(2) Lists of the parties to whom screenings are sold shall be furnished monthly to the Minister of Agriculture by the managers of the elevators or warehouses. 1907, c. 15, s. 14; 1911-12, c. 4, s. 26 (4).

15. No person shall place outside any mill, elevator or grain warehouse, except in a securely constructed building, shed, or covered bin, any matter containing the seeds of noxious weeds without first having destroyed the germinating power of such seeds. 1907, c. 15, s. 15.

16. Every thresher shall thoroughly clean his machine, both inside and out, and all his wagon racks, immediately after threshing at each setting and before removing the machine or any part thereof to another setting. 1907, c. 15, s. 16; 1911-12, c. 4, s. 26 (5).

17. Every thresher shall clean the grain threshed by him, and when delivered to the owner it shall contain not more than one hundred seeds of noxious weeds other than wild oats, to every thousand of grain, and all screenings containing seeds of noxious weeds shall be either destroyed by the owner within five days after the grain is threshed or removed in closely woven and securely tied sacks. 1907, c. 15, s. 17.

18. Every thresher shall display in a prominent place upon his machine a card containing this and the two next preceding sections, which card shall be furnished free upon application to the Department. 1907, c. 15, s. 18.

MANITOBA

An Act Respecting Noxious Weeds, 1924. Chapter 43, Section 46.

Any person, firm or corporation, including railway companies, express companies and other common carriers, being the owner of operator or the agent of any owner or operator of any mill, threshing machine, grain elevator or grain warehouse, farm or other land, who, either by his own act or by another person with his knowledge or consent, places or permits any seeds of noxious weeds, whether mixed with other things or not, to be placed on any road, railway, highway, street or lane in any municipality shall be liable to a penalty of not less than twenty-five dollars nor more than one hundred dollars, together with costs.

Dominion Millers.

At Montreal and Toronto, we heard the complaints of the Eastern Millers in respect to screenings. They purchase their wheats on the Candian Certificate final. They told the Commission that their shipments of wheat of ten contain $1\frac{3}{4}$ per cent of screenings, and these constitute a big loss to them now that a Dominion law prevents grinding and mixing the screenings with the offals—bran and shorts. Oatmeal manufacturers complained of dirty oats. They urged that an effort be made to have these percentages reduced, at least to the requirements of the statutes in this respect. Old Country millers and merchants complained of too much dirt in wheat, oats and barley shipments on the Canadian Certificate.

Threshermen.

The threshermen's evidence was to the effect that it takes time and labour and power to thresh weeds. Wild oats clog the screens. The small seeds accumulate under the separator and become a nuisance. If he is threshing by the bushel, he must see to it that everything in the form of seeds goes through the automatic weigher. If he is threshing by the hour he can make a better separation which the farmer should be willing to pay for. The thresherman prefers threshing grain rather than weeds. It is more profitable to him and much more satisfactory.

Local Elevator Operators.

The local elevator operator is anxious to secure for his elevator as large a volume of grain as possible, and at the same time give dispatch to the grain wagons. The screenings cause the greatest hindrance in attaining these objects. It takes time to sample, screen, weigh and set the dockage. Unnecessary delays are caused through disputes arising out of the setting of the dockage. If he cleans the grain at the farmer's request, more valuable time is consumed, while in the rush season wagons are waiting outside to be unloaded. Screenings accumulate and have to be removed. While teams are waiting to be unloaded, the threshing outfits on the farms are also being delayed unless extra teams for hauling have been provided, all of which creates extra expense to be borne by the grain.

The elevator operator is in very many cases a man quite unskilled in the operation of a cleaner and of cleaning grain, and as a result the grain is poorly cleaned, if cleaned at all. Often the cleaner is not in a condition to do the work properly. The great variety of screenings contained in the grains makes the problem of handling them by the local operator more difficult, and more expensive.

The Terminals.

The Canada Grain Act provides that grain entering the terminals with dockage set shall be cleaned accordingly and sets forth the conditions and rates to be charged for the service. The terminals face new problems continually in connection with screenings owing to the variations in quantity and kind during a season and throughout the different seasons. Those of one crop year differ from those of another. Cleaning equipment soon becomes obsolete, and new machines with the latest improvements must be installed to take their places. Many terminals are fitted up at great expense with the very latest equipment for taking care of this part of the grain business. One terminal operator stated that his house had \$75,000 worth of equipment for cleaning and conditioning grain. Screenings take up valuable space in the house. If the terminal fills up with uncleared grain that cannot be gotten out, there is congestion, and heavy losses have to be sustained. At one time during the fall of 1923, the terminals were unable to clean the grain fast enough to keep the crop moving, owing to the high percentage of dockage.

Refuse screenings accumulate and become a nuisance. Their removal costs money and this again becomes a charge upon the grain. Every charge which they necessitate has to be borne eventually by the producer.

It was stated that the terminals have shipped grain containing more screenings than the grade should carry, and that this and the reclaiming of grain from the screenings constitute sources from which overages accrue. It was shown that during the rush of grain intake before the close of navigation, some terminals were shipping to Bay ports grain on Canadian Certificates containing too much screenings—with dockage set by the inspector. This is an improper practice, and is a menace to the Canadian certificate.

The terminals should be fully equipped to make every separation necessary not only to clean the grain thoroughly, but to separate the screenings into market grades—oat scalings, standard re-cleaned screenings and refuse screenings.

Merchandising Screenings.

The grain companies are endeavouring to find markets and to merchandise the screenings just as they do in respect to any other grain products and at the present time these feeds are becoming fairly well known in international trade and a good demand exists for them. Owing, however, to the difficulties that stand in the way of standardizing them, their full value is not reflected

in the prices quoted for standard re-cleaned screenings. It is expected that this condition will change when confidence in the grades and quality has been established among the purchasers of stock feeds. Suggestions for improvement along these lines will be dealt with later in this report.

CLEANING

On the Farm.

The ideal condition on the farm would be to produce no screenings. But, notwithstanding all the efforts that have been made towards bringing this about on the part of the farmer, investigators, agricultural workers and governments, the amounts and kinds are increasing. Farms and districts and provinces are becoming weedier where extensive grain-growing is practised, and where no system of proper rotation is in vogue. The introduction of Marquis wheat as a substitute for Red Fife has had an important influence upon the increased amount of cracked wheat now found in the screenings, especially from Southern Alberta and Southwestern Saskatchewan, where the conditions are such as to produce a hard dry berry that clings tightly to its chaff. The concaves have to be set closer, and the result is larger quantities of cracked wheat in the screenings. In the districts mentioned above, some years probably 60 to 80 per cent of the recleaned screenings are composed of cracked wheat, while in Northern Alberta, Northeastern and Eastern Saskatchewan and Northern Manitoba, the same percentages would hold for wild oats and wild buckwheat. But over the whole of the grain growing area there is a preponderance of small black seeds that are of no value to the farmer.

The screenings are a part of the farmer's crop. A great portion of them have no food value. These small black seeds and rubbish should be kept on the farm and disposed of in such a manner as would render them harmless to agriculture. In this way, a great saving in cost of hauling, elevating, freight, cleaning and storing would be effected. The farmer himself, who knows the conditions of his crop, should be able to figure the cost and saving, and make his own decision as to how he will dispose of these refuse screenings.

Cracked wheat, wild buckwheat and wild oats all have substantial food values for stock of various kinds. They have a market value, too, just as other grains have, but it costs a good deal to separate these from the wheat. The farmer cannot afford, except perhaps in rare cases, where such dockage would be very high, to make such a separation. At the time of threshing, everything has to be done in haste. Labour is high priced, and time itself is valuable. Many witnesses gave evidence on this point. In Manitoba, the farmers believe, and it appears to be the fact, that a better price is received for wheat during the first few days of threshing, and that if they took time to clean on the farm they would lose this margin, and the gain on cleaning would not compensate them for the loss on price. Some, who were more distant from market, and in a part of the country not so favourably situated as regards early threshing, favoured cleaning the grain on the farm, and there were few who practised this method. They did not, however, clean at threshing time, but left it for a winter operation, when time and inexpensive labour were available. This practice will, we feel sure, become more general as farmers change their system of farming and reduce their grain acreages. They will then be able to pay more attention not only to methods of production but to keeping the quality of their products up to a high standard. There should be no relaxation of effort—there should be a renewed effort in the matter of encouraging the farmer along this line. He will, however, have to be the judge as to whether this method is a paying one. If it is, he will probably adopt it; if not, he will reject it and discover a better one.

The Thresherman.

Threshing machines in the Old Country, for example, are made to do practically a perfect job of separating grains not only from screenings, but into grades for market. In their operation, however, the element of time counts for little. By this is meant that they do not have to be hurried. These machines are used in countries where the season and other conditions are favourable to their operation through several months. The grain is all stacked and thatched to withstand the weather. The machines are operated by men who are skilled workmen, who look forward to continuing the work year in and year out, perhaps for a lifetime.

On the prairies the season for threshing is short. The equipment in the past has been expensive. A large amount of capital is invested in the outfit—\$5,000 and often more. On the average of seasons, this outfit works about 26 to 30 days—not long for so great a capital outlay. There is a big gang of men—engineer, separator man, tank man, spike pitchers, teamsters, grain wagon men and often a cook. Interest on the investment, depreciation, wages, all must be paid and a profit secured for the owner and manager of the outfit. And the farmer is in a hurry to get his grain threshed and away to the market, in order that he may sell at once for cash, to discharge obligations, or at such time as the market suits him. Time is an important factor.

We have pointed out that on a average about 55 to 75 per cent of the screenings, depending upon conditions, have no food value and are of little value for any other purpose at the present time. The Canadian thresherman can make almost a perfect separation of these and leave them on the farm where they can be destroyed. But he must be paid for threshing these weeds and for making the separations. The farmer who engages the thresherman should come to terms with him in advance, in respect to this operation, and see to it that the terms of the agreement are properly carried out. We suggest that a more equitable method of paying for threshing is by the hour or day rather than by the bushel. This method will compensate the thresherman and will result in cleaner and better crops on the farms, fewer broken kernels and cleaner grain products for the market.

And yet another plan is in the process of being worked out. A new machine called the Carter Disc Cleaner has come on the market in recent years. This machine is installed in all the terminal elevators and an effort is being made to adopt it for use in the field at threshing time. For the present, the idea of making it a part of the threshing machine has been abandoned. It appears now as if it would come into operation as a supplement to the separator. It is made in different sizes to suit the capacity of large and small separators. The cleaner is mounted on a separate truck, and is driven by a separate engine. It is possible with this machine to make complete separations of wheat, oats, recleaned screenings and refuse screenings.

This is extra equipment for handling a by-product of grain growing. If the charge for this additional work is less, or if the saving is greater to the farmer than any other method of dealing with this product, there is no doubt but what he will consider it favourably. At first sight this looks like a solution to the problem of keeping the screenings on the farm where they are produced and in the district in which they may be useful in maintaining live stock; in saving hauling, freight, elevator and storage; and removing other annoyances which appear to have their origin in the screening question.

The United States Department of Agriculture has for a number of years been engaged in carrying on investigations in the wheat belt of the north central States with a view to adapting the Carter Disc to the threshing machine separator, and much valuable data has already been obtained.

We recommend that every encouragement be given to the matter of discovering a practical method of separating the small weed seeds and other refuse

from the marketable grain at the time of threshing. It is desirable also, if at all practicable, to save to the farm such screenings as are valuable for stock foods.

Local Elevator.

The local elevator is usually a house with a binning capacity of about 30,000 bushels and costs now, at least, \$10,000 to erect. Its chief functions are to take in grain either on its own account or for the farmer; to store and discharge into cars for shipment. In doing this, it has to sample, ascertain the weight per measured bushel, screen and satisfy the farmer as to grade and dockage except in the case of special bin grain, and weigh and elevate the grain as well as weigh the empty wagon. If the farmer asks to have it done, the operator must run his grain through the cleaner, if he has one in operation.

In order to operate a house and perform these services, we have evidence that it costs on an average from \$3,800 to \$4,200 a year. The charge for weighing, elevating and storing and insuring for 15 days, and loading into cars, is $1\frac{3}{4}$ cents per bushel. A similar charge is made for special binning, except in the case of the Saskatchewan Co-operative Elevator Company, whose charge for this service is $2\frac{1}{2}$ cents per bushel. It will be seen that if a country elevator handles 100,000 bushels, which is more than the average for the 4,000 elevators on the prairies, its revenues on handling and binning will be only \$1,750. But, it has been shown in evidence that the loss—a very evident one on handling—is made up on the purchased street grain, which amounts to about 50 per cent of the grain handled at the country elevators.

The local elevator must handle volumes of grain with dispatch, in its own interest, and also to facilitate and expedite the movement of the crop as a whole. The crop must be gotten as far on the way to the seaboard as possible before navigation closes.

But some country elevators are equipped with cleaners and cleaning is included in the charge of $1\frac{3}{4}$ cents for handling through the elevator. The evidence goes to show that a large number of country elevators in the past had cleaners installed in them, and that many of them have been removed or have gone into disuse because the farmers did not patronize them. The elevator companies themselves did not use them for cleaning their own purchased grain. In many cases where they were used, the screenings were left to accumulate and became a nuisance and an expense to the elevator, and a menace to the farms of the district. The Saskatchewan Co-operative Elevator Company, in 1922 and 1923, had in all 387 country elevators and of these 367 were equipped with cleaners at the request of the shareholders, and as a matter of policy. It cost about \$1,500 to equip a new elevator with an ordinary utility cleaner, and about \$2,000 to remodel and equip an old type house. If a Carter Disc machine were installed it would cost at least \$2,000 more. The Company had a total capital investment in cleaners amounting to \$496,500. During the crop handling season—September 1, 1922 to August 31, 1923—only 25 per cent of these cleaners were used, and out of a total of over 40,000,000 bushels of grain handled, cleaned only 2,175,150, and this at an average cost of $2\frac{2}{3}$ cents per bushel. In making this estimate of the cost, the engineer in charge took into account only the interest on capital, the depreciation in value of the mechanical equipment and cost of gasoline. He allowed nothing for use of building nor for the labor involved in doing the work, which, in the estimation of the commission, is a very considerable item of cost in cleaning grain, especially during the rush of harvesting and threshing.

The manager of the company, when giving evidence, stated that the cost of cleaning a bushel of wheat in the country elevator to be about 4 cents. Mr. Forsythe of Portage La Prairie also put the cost of cleaning at 4 cents per bushel. The Saskatchewan Co-operative Elevator Company, handling between

40,000,000 and 50,000,000 bushels, about 50 to 60 per cent of which is purchased grain, does not clean its own, but sends it on to the terminals, where it claims the work can be done better and much more economically.

The engineer of the Saskatchewan Co-operative Elevator Company, in his evidence, stated that No. 1 Northern Wheat containing about 12 per cent dockage would require two cleanings. It would take about 20 minutes to put an 85 bushel load through, and if the dockage were much above 12 per cent, of course, it would require more time. Evidence was submitted on various occasions that the time required to discharge an average load of wheat is 4 to 5 minutes, and this is in accord with other evidence received to the effect that a country elevator would, during the rush season, under average conditions, handle from 8,000 to 10,000 bushels during a ten-hour day.

Now let a farmer drive on the scales with an 85 bushel load of wheat with 12 per cent dockage. Without cleaning, he would be off with his ticket in, at most, 5 to 6 minutes, and the next wagon would be on the scales and treated likewise. But the man with the 12 per cent dockage wants his wheat cleaned. In the remodeled elevators, the wagon remains on the scales while the wheat is being cleaned and the screenings drop into the wagon box. While this is going on, at least 20 minutes of valuable time is consumed. The waiting farmers outside might have been unloaded—at least three or four of them—and away for other loads. But the elevator, too, has lost four loads of 85 bushels each, or 340 bushels, which might have been put through at $1\frac{3}{4}$ cents per bushel, or purchased, as the case may be.

At best, the ordinary cleaner in the elevator cannot make a complete separation. The grain will have to be cleaned again at the terminals, at a cost to someone, which eventually falls upon the grain itself, and is paid by the farmer. An elevator, to make a complete job where wild oats are present, must have installed a Carter Disc machine, which will increase the capital cost by at least \$2,000 and decrease the handling space in the elevator. The ordinary cleaner will put through about 500 bushels of No. 1 Northern wheat per hour, provided it is not heavily charged with wild oats. Lighter wheat runs more slowly, and is consequently more expensive to clean. The expense of all this has to be borne by the grain and in the past has fallen directly upon the seller of street grain in wagon-load lots.

While there are carloads with very high dockage and districts that produce quite a number of these carloads, it should be pointed out that the average dockage set on the whole wheat crop of the prairie provinces by the Inspection Department from September 1, 1923, to March 1, 1924, was 2.64 per cent, and the dockage set on all the grain received into the public terminal elevators at Fort William and Port Arthur for the crop year 1922-23 was as follows:—

Grain	Bushels	Carloads	Screenings per car	Per cent
				bush.
Wheat.....	137,873,297	104,131	28.5	2.17
Oats.....	16,856,331	8,385 $\frac{1}{2}$	1.1	0.11
Barley.....	12,237,244	8,198 $\frac{1}{2}$	19.9	1.32
Flaxseed.....	2,097,278	1,897 $\frac{1}{2}$	102.0	11.73
Rye.....	10,059,076	7,429	23.0	1.86

It was suggested to us that all country elevators should be compelled to put in cleaners. Then, in order that no injustice should be done the country elevator companies, it would be necessary to make it compulsory for the farmers to have their grain cleaned. This, however, would be impossible, for in Manitoba, where we heard most about this, there are districts where 60 to 70 per cent of

the farmers use the loading platform, which they regard as a part of their charter of liberties, so far as the marketing of grain is concerned. To force all country elevators to equip with cleaners would add a very heavy financial burden, which would in the end have to be borne by the farmers' grain.

There are a very large number of farmers who market their grain with little or no dockage, and only a few whose grain contains a high percentage. The equipment would have to be installed for the very few, at the expense of the producers of clean grain.

Mr. Forsythe of Portage la Prairie, who handles grain for mixing purposes, stated that a country elevator equipped fully to clean grain will cost at least \$15,000, and this, with a handling capacity of 100,000 bushels. Mr. John McFarland, of the Alberta Pacific Grain Company, in his evidence said that his company had a number of elevators equipped with cleaners, but that the farmers did not use them. The following table shows the present state of a representative number of elevator companies as regards cleaners installed in their country houses:—

CLEANERS INSTALLED IN COUNTRY ELEVATORS

Company	Total number of elevators	Number equipped with cleaners	In use
Saskatchewan Co-operative (Farmers' Company).....	387	367	25
United Grain Growers Ltd. (Farmers' Company).....	367	267	25
National Elevator Co. (Private Corporation).....	105	17	5
Saskatchewan Elevator Co. (Private Corporation).....			
(Not put on any cleaner to date)			
"A"—Private Company.....	61	2	
"B" ".....	79	0	
"C" ".....	155	3	
"D" ".....	96	25	1
"E" ".....	96	34	10
"F" ".....	47	1	
"G" ".....	17	0	0
"H" ".....	123	17	12
"I" ".....	117	1	0

Recently some companies have installed cleaners at a cost ranging from \$2,500 to \$3,300 to enable them to compete for volume with other companies at the same points, to find that these cleaners have been used little or not at all.

We have found that a number of country elevator companies in all three provinces at one time or another equipped more or less of their houses with cleaners; that the cleaners were not patronized by the farmers generally; that where they were used the screenings were too often left at the elevator; that the actual cost of cleaning grain in country elevators is excessive except under abnormal conditions; that the charge allowed for cleaning is entirely inadequate; that cleaning grain in country elevators under conditions prevailing in Western Canada is uneconomical and unjust in that the burden of the cost falls directly upon the seller of street (wagon load) wheat, who is least able to bear it; that the tariff rates for cleaning should be revised; that it would be physically impossible for the country elevator to clean all the grain taken in; that the grain, when put through the cleaners, is only roughly cleaned, and has to be cleaned again at the terminals; that country elevator companies do not clean their own purchased wheat, amounting to from 50 per cent to 60 per cent of their handlings, because it does not pay them to do it. One of the best examples of this is the Saskatchewan Co-operative Elevator Company, which was organized for the purpose of doing as much as possible to assist the farmers to market their grain to advantage. It has installed cleaners in 367 out of 387 of its houses. It has experimented with cleaners and investigated the economical

bearing of cleaning upon the handling of grain. Its general manager says that cleaning grain in country elevators is not economically sound and that he would advise against it. His company does not clean its own purchased grain.

From the evidence submitted, we cannot recommend that country elevators be compelled to instal cleaners nor can we recommend that farmers be compelled to have their grain cleaned at country elevators, as this would deprive them of the use of the loading platform, which is so extensively used in the province of Manitoba, and would entail other losses as well. In the three provinces, there are 1,530 shipping stations with 1921 loading platforms, over which, from September 1, 1922, to May 25, 1923, there were 31,750,000 bushels of grain loaded.

Nor do we find that we can recommend the practice of cleaning grain at country elevators. If there is a cleaner, the farmer himself will have to be the judge as to whether or not it will pay him to use it. No one can work this out better than the farmers themselves, and the practice of a district in this respect will usually be found to be that which pays best. The fee for cleaning at country elevators as at present is entirely inadequate, and if it were adequate it would be much more than all, but a very few farmers with very dirty grain, could afford to pay.

At Terminal Elevators.

The terminal elevators at Fort William and Port Arthur and Vancouver, and those in the interior at Saskatoon, Moose Jaw and Calgary, are all equipped with cleaners of the most modern design, and are able not only to clean grain, but to make practically every separation that is required. They can operate twenty-four hours a day if necessary. They have men specially qualified for operating the cleaners, in order that the greatest efficiency may be secured. All grain coming into the terminals, with dockage shown on the certificate, must be cleaned, in order to pass inspection out. (See Canada Grain Act, section 100, and Regulations of Board of Grain Commissioners covering same.) The shipper knows that his grain can be cleaned there to better advantage than at any other point, and that the charge for doing it is reasonable. His screenings can be separated and graded and merchandised, and he will receive a cash return for them, just as he does for his grain of whatever kind. On account of the volume and the efficiency of the plant, the terminals can do this work more economically than it can be done at any other point, and they can do it better. The screenings being concentrated at a point such as at a terminal, can be handled and put upon the market to the best advantage. It may be that the freight rate will be so high that they cannot be returned to the district or the province from which they came, but they will follow the course of least resistance, and find a place where they can compete in price with other feed stuffs, such as feed oats, low grade barley and wheat.

The interior terminals are in a different position. Grain does not pass into them unless it is economical and advantageous for it to do so. It may be for seed grain, or it may be to relieve congestion on the railway, or from some other course, but the expenses on grain passing through an interior terminal—additional railway and elevating charges—constitute a barrier. The farmer or grain buyer hesitates to put grain into an interior elevator because of its usual disadvantageous position. He wants it as near the seaboard as possible. When grain, for any cause, does go into these elevators, it is cleaned and the screenings are available for the home market. This source of supply, however, cannot be depended upon, owing to its irregularity. When screenings are available at such points, they come into competition with other marketable feeds of the district. When coarse grains are scarce, recleaned screenings have considerable value, but, on the other hand, when there is an abundance of coarse grains for feed, it is difficult to find profitable markets for screenings at interior points.

For the year ending August 31, 1913, the screenings cleaned out of the Western grain crop were a little in excess of 100,000 tons.

DOCKAGE ON WESTERN CANADIAN GRAIN CROP OF 1923

Dockage on Receipts at Fort William-Port Arthur and Vancouver Terminals

	Total Gross Receipts	Total Net Dockage	Dockage		
			lbs.	lbs.	per cent
<i>Fort William-Port Arthur—</i>					
Wheat.....	18,287,758,760	470,507,550			2.57
Oats.....	1,982,832,320	560,740			0.028
Barley.....	771,443,890	7,433,450			0.97
Flaxseed.....	293,952,330	21,685,810			7.38
Rye.....	393,715,030	9,292,020			2.36
Mixed Grain.....	57,881,160	690,070			1.19
Total all grains.....	21,787,583,490 or 10,893,791 tons	510,169,640 or 255,089 tons			2.34
<i>Vancouver—</i>					
Wheat.....	3,189,488,040	47,232,870			1.48
Oats.....	31,192,860	6,120			0.02
Barley.....	3,473,280	13,190			0.38
Rye.....	18,851,620	165,990			0.88
Mixed Grain.....	59,670				
Total all grains.....	3,243,065,470 or 1,621,532 tons	47,418,170 or 23,709 tons			1.46
<i>Grand Total, Fort William-Port Arthur and Vancouver—</i>					
Wheat.....	21,477,246,800	517,740,420			2.41
Oats.....	2,014,025,180	566,860			0.028
Barley.....	774,917,170	7,446,640			0.96
Flaxseed.....	293,952,330	21,685,810			7.38
Rye.....	412,566,650	9,458,010			2.29
Mixed Grain.....	57,940,830	690,070			1.19
Total all grains.....	25,030,648,960 or 12,515,324 tons	557,587,810 or 278,793 tons			2.23

Approximate amount paid for the transportation of Dockage in grain shipped to the Fort William-Port Arthur and Vancouver terminals, Crop of 1923—

557,587,810 lbs. at 21c. per 100 lbs. \$1,170,934.40

From these figures, it will be evident that the total volume of screenings arriving at the various terminals annually is very large, and that it is continually increasing as the volume of grain increases. These screenings, at the head of the Lakes and other terminal points, constitute a real problem, as shown in this report. (1) They have a considerable value as stock foods, when separated from the refuge screenings, and the western producer feels strongly that he should derive some pecuniary advantage from their salvage and sale; (2) they are a source of noxious weed distribution on the farms of eastern provinces and states, where in the past they have been distributed in a careless manner; (3) they are finding their way in too large quantities into out-going shipments of grain from the terminals, and are thus lowering the quality of the grain represented by the Canadian Certificate final; (4) their presence in the outgoing grain accounts in part for the overages of wheat and other grains in the terminals; (5) the producer suspects that a higher dockage is set by the Inspection Department, than is taken out by the terminals; and (6) that the amount of screenings shipped is less than the dockage set usually by an amount that constitutes a considerable portion of the overage in the terminals.

Under present conditions, many difficulties stand in the way of dealing with this large volume of screenings, so as to prevent alleged abuses and allay suspicions. We, therefore, recommend that all the screenings, to the amount of the dockage set on the grain entering the terminals at the head of the Lakes, Vancouver and other terminal points, be cleaned out and handed over to the Dominion Government; that the Government provide such facilities for handling them as will safeguard the interests of all concerned; that the Board of Grain Commissioners establish a scale of fees for cleaning all grain carrying dockage, not excepting wheat carrying 3 per cent and oats 5 per cent as at present; and that the terminals be compensated for the services they perform in cleaning the grain, and for handling and storing screenings. We recommend, further, that an effort be made (1) to have the inspection department at Winnipeg and other points indicate approximately on the original grade certificate the percentage the recleaned screenings bears to the total dockage to enable settlement being made to the farmer; (2) to establish a system of grading the recleaned screenings, so that they may be dealt with as cracked wheat, oat scalings or wild buckwheat to enable those charged with administration to classify them more nearly in accord with feed standards, and merchandise them more easily and profitably.

The government, having taken over the screenings, should have them cleaned to grade, according to fairly definite standards suitable for stock foods, and ground by attrition mills so that the small percentage of weed seeds that remained would have their germinating powers completely destroyed.

Some of this work could be done at the terminal point. At the head of the Lakes, all the cleaning for that point could be done, and some grinding for reshipment to the prairies and to Northern Ontario. But large quantities of screenings are purchased annually by Ontario and Quebec farmers. These could be carried more economically by boat in bulk across to a Bay port, where suitable facilities should be provided for grinding and reshipment. When all charges incidental to handling, and merchandising the screenings have been paid, the balance should be distributed among the producers, or handled in such a manner as would remove the dissatisfaction that now exists.

Recommendations

We recommend—

- (1) that every effort be put forth by farmers to reduce the quantities of weeds grown in the grain crop;
- (2) that threshermen be encouraged to equip their separators to clean out all small seeds from the grain during the threshing operation, one of the strongest inducements being to pay him by the hour or day, or to arrange to measure the weed seeds threshed by some equitable method, and to pay for separating them;
- (3) that, under conditions where it will pay the farmer to do it, encouragement be given to the use of a supplementary separator that will extract the screenings that have value for stock feeds, and retain them on the farm;
- (4) that where conditions are favourable the farmer clean his own grain on the farm;
- (5) that investigations be carried on to help solve the question of cleaning on the farm, either at threshing or at other convenient times.

We cannot recommend that country elevators install cleaning equipment, nor can we recommend the country elevator as the proper and economical place to clean grain, under present conditions.

MIXING IN PRIVATE TERMINAL ELEVATORS

GROWTH OF THE SYSTEM

Since complaints touching the mixing of grain have received wide publicity and since there appears to be a very considerable degree of confusion in the public mind as to what is actually meant by the practice it may be well at the outset to distinguish between three kinds of mixing.

Types of Mixing.

(1) Canadian wheat may be purchased by American importers, brought into the United States and there mixed with American grain. This grain may then be sold and shipped abroad under an American certificate of grade. This practice is not illegal and is beyond Canadian control. The American certificate issued indicates to the European importer the nature of the product he is receiving.

(2) Canadian wheat while passing through the United States for shipment abroad may be tampered with and mixed with American wheat. Complaints that this has occurred have been made by British importers. What has been alleged is that cargoes of wheat carrying official Canadian certificates of straight grades of Canadian hard wheat turned out to be cargoes of mixed wheat, consisting partly of Canadian wheat and partly of softer and inferior varieties of wheat grown in the United States. Such a condition means an illegal and clandestine adulteration of the Canadian product. The extent of this evil and the precautions adopted to eliminate such irregularities and frauds are reviewed and discussed elsewhere.

(3) There is also the mixing together in licensed private elevators at Fort William, Port Arthur, and elsewhere of straight grades of Canadian grain, including the grades fixed by statute and the commercial grades fixed by the Standards' Board. After mixing when the product is being shipped out in cargo shipments, if the elevator is on the waterfront, or in carlots out of an inland house, the grain is sampled by the officials of the Inspection Department, examined, and receives, according to quality, a regular straight grade official certificate, exactly the same as those issued upon grain when initially inspected at Winnipeg or other Western inspection point, or upon grain coming from the public terminal elevators.

In the case of the public terminal elevators all grain of a given grade is required to be stored together, the inspection outward being merely a check to see that the public terminal elevator has in fact done what it is obligated to do. With the private terminal elevators, on the other hand, there is no such obligation; mixing takes place and when the grain is shipped out there is a second inspection of the grain and a straight grade is placed upon the mixture.

Against this practice of giving straight grade certificates on mixed grades of grain very strong objections have been urged by farmers and public men at various points throughout Western Canada, also by the Dominion Millers' Association. On the other hand, the practice has been strenuously defended by the large and powerful interests engaged in the business, in fact, by the grain trade generally.

The subject has had extended inquiry. The significance and perplexity of the problem do not become apparent at first view but its importance warrants very full consideration of the evidence presented on both sides. A determination of policy here means a determination of the lines along which the grain trade must go in its future development. We purpose, therefore, to trace the use of the mixing houses to their present position of importance, as the best way to throw light upon the situation.

Situation Between 1883 and 1904.

In the early days there were several private elevators at Winnipeg and one at Emerson, Manitoba. These elevators bought and mixed grain after it had been graded. They sold their output in various ways. They handled it on the basis of sample, shipped it to the American market and had it graded into the public terminals. The grain trade was in its infancy and the general regulations at first were not as comprehensive and carefully drawn as later. Meanwhile, at the head of the lakes, between 1883 and 1904 the railway companies owned and operated all the terminal elevators. At times during this period complaints were made that mixing or manipulating grain was occurring in these terminals. The practice was considered irregular and received no support from the railways or from the trade. W. C. Van Horne, of the Canadian Pacific railway wrote (May 23, 1892) "The manipulation of grain at terminal or transfer elevators, I hold to be wrong in principle. The practice in many of the private elevators in the United States has been a source of scandal." In the same year the Winnipeg Grain Exchange, supported by the Boards of Trade at Winnipeg, Brandon and Toronto, asked the Department of Inland Revenue, under whose supervision the inspection of grain then fell, to require that the inspection certificate on mixed cargoes should be in such form as to show the composition of the cargo. This request was acceded to and instructions issued to the Grain Inspector at Fort William to act accordingly. It will be noted that these instructions aimed at protecting the export trade. Nothing was said about giving a grade to mixed grain being put into storage at the terminals.

Again in 1889, the Winnipeg Grain and Produce Exchange (which succeeded the Winnipeg Grain Exchange), complained that mixing was occurring at the terminals and alleged that the practice was injuriously affecting the reputation of Manitoba grain on the European markets. It urged that all grain should be inspected at Winnipeg and should be warehoused at Fort William on that basis.

The amendments of 1899 to the General Inspection Act did not allow straight grades on mixed grain. When Mr. T. G. King, the owner of a cleaning and drying elevator at Fort William complained in 1900 that the new grain inspection system was injuring his plant the utility of his elevator was recognized, and a conference with the Department at which Mr. King, the Chief Grain Inspector and the Secretary of the Winnipeg Grain and Produce Exchange took place. It was agreed to be within the spirit of the regulations that when grain was graded as "no grade" or "rejected" on account of being smutted or damp, it might, after being cleaned, scoured or dried, receive a certificate specifying the state or quality of the grain. It was provided, however, that the grade should not be other than a commercial grade and that the certificate should include the term "scoured" or "dried" as the case might be.

Thus, between the year 1888 and 1904 the development was that to ship out mixed cargoes of grain under a straight grade certificate was not considered desirable and was forbidden. Cleaned or dried grain might be regraded but the certificate must show on its face if the grain had been scoured or dried. The ideal aimed at was that a straight grade certificate on outward shipments should mean the average of the grade in the views of the terminal elevators. The trade was intent upon making and establishing a high reputation for grain sold under the Canadian certificate.

Between 1904 and 1912.

In 1904 two public elevators were built at Fort William by companies in the grain business. These were the first public elevators to be owned and operated by other than the railway companies at the head of the lakes. Other grain companies followed this lead. In 1907 a private elevator (i.e. mixing house)

was built at the head of the lakes and two more were built in 1909. In 1906 the Canadian Northern railway leased its terminal houses to grain companies.

The period thus marks the gradual assumption by the grain companies of control over the terminal facilities at the lakehead, replacing the railway companies. The terminals and the country elevator system were being connected up. In addition, private elevators or mixing houses made their appearance.

During this period the public terminals were operated under the jurisdiction of a warehouse commissioner and were required to be licensed. This was part of the Manitoba Grain Act of 1900. When the private houses appeared at the head of the lakes they were called upon by the warehouse commissioner to take out licenses as public terminals. The private elevators objected that they did not have sufficient storage and that they wished to confine their operations to their own purchased grain. Considerable difficulty arose. In the event the private elevators were operated either under a terminal elevator license, a country elevator license or no license at all. These private mixing elevators shipped grain into the public terminal elevators where it received a grade upon being inspected in.

After 1912.

The third period dates from the enactment of the Canada Grain Act, 1912, to the present. The Canada Grain Act, 1912, itself introduced a number of important changes in the regulations governing the grain trade, but the period includes the exceptional conditions under which the grain trade was conducted during the war, the striking growth of the farmers' co-operative companies, changes in the American market for Canadian grain, the rapid increase of private elevators for mixing at Fort William and Port Arthur, and a change in the attitude of the trade to the shipping of mixed cargoes of grain under straight grade certificates. A certain amount of confusion is to be found due to the rapid changes in the situation.

Increase in Private Elevators.

In 1909 there were three private elevators at the head of the lakes. In 1912 four more were built. This number has increased until now there are twenty-five private elevators at Fort William and Port Arthur. Not all of these were built as private elevators. A number were large plants which originally operated as public terminals. Sixteen of the private elevators are on the lake front, and nine inland. The total capacity of the group is 23,535,000 bushels. Added to this there are five private elevators at Winnipeg with a capacity of 1,350,000 bushels. These elevators now operate as private elevators, licensed as such by the Board of Grain Commissioners. All grades of grain are inspected into these mixing houses, mixing takes place, cargo or carload shipments are inspected out and receive a straight grade certificate, indistinguishable in form from those issued upon grain shipped from the bins carrying the average of the grade in the public terminals.

Compared with the twenty-five private elevators at Fort William and Port Arthur there are at present ten public terminals, but these are relatively large houses and they have a total capacity of 39,925,000 bushels, collecting much in excess of the private houses. It has already been pointed out, also, that certain houses, built as public terminals, have recently turned private. It may also be noted that the railway companies have leased one house after another to grain companies until now, with one exception in 1923-24, there are no railway-operated elevators at the head of the lakes.

Yet despite this great change in terminal conditions at the lake head it may almost be said that private elevators are not known to law. The interpretation section of the Canada Grain Act, 1912, defines all kinds of elevators, but does not include therein private elevators. Except for a minor amendment, sub-

section 5, of section 57, touching warehouse receipts, inserted in the Act in 1919, private elevators are not mentioned. If it appears desirable to make the law conform to the present practice the statute must be modified considerably to make it conform to this view.

The Canada Grain Act, 1912.

The Canada Grain Act, 1912,—

- (1) created the Board of Grain Commissioners with power subject to the consent of the Governor in Council, to make rules and regulations for the government, licensing and bonding of terminal or other elevators and all matters necessary to the carrying out of the Act;
- (2) provided for hospital elevators;
- (3) made provision for sample markets;
- (4) provided that the mixing of grain might be permitted in connection with sample markets under such rules and regulations as were recommended by the Board of Grain Commissioners and approved by the Governor in Council.

Hospital Elevators.

We may first note the sphere and status marked out for the hospital elevators. Section 2, clause 3, defines hospital elevators as including "every elevator or warehouse which is used for the cleaning or other special treatment of rejected or damaged grain and which is equipped with special machinery for that purpose."

Section 124, subsection 1, states that "there may be such number of hospital elevators as are determined by the Board, which shall be governed by such regulations and restrictions as are imposed by the Board." Subsection 2 says that "any such elevator shall be required to take out a license and furnish a bond in such amount as the Board determines." Subsection 3 provides that "notwithstanding anything in this Act, but subject, nevertheless, to the provisions of Section 99, and subsection 5 of section 115, grain which is being shipped out from a hospital elevator shall, at the request of the owner or possessor thereof, or of his authorized agent, be inspected and graded, and that the grade so arrived at shall be the grade thereof."

Section 99 to which reference is made, states that "when grain is shipped from any elevator being systematically reduced in quality below the general average quality of the grain of similar grades in the bins of the terminal elevators, the Chief Inspector shall instruct inspecting officers that no such grain shall be allowed to pass inspection except on a lower grade." Section 115, subsection 5, says, "no grain that has been subject to scouring or treatment by use of lime or sulphur shall be graded higher than No. 3." Where hospital elevators were inland the application of section 99 would prevent them causing a deterioration of the grain in the bins of public terminals by shipping in to them a minimum grade.

These sections of the Act obviously aimed at the authorization of a limited number of hospital elevators which would receive tough, damp, smutted or otherwise damaged grain. By cleaning, scouring and mixing the grain it could be put in marketable shape and was to be inspected out, or into the public terminal elevators chiefly in the lower grades. It will also be noted that the Board of Grain Commissioners were empowered to impose regulations and restrictions, but that the Act, in this instance, does not say that these regulations or restrictions must be submitted to the Governor in Council for approval. In fact, they were not submitted for approval.

The Act, moreover, is not clear in its definitions of kinds of elevators. Section 2, Clause (y) defines a terminal elevator as including "every elevator or warehouse which receives or ships grain, and is located at any point declared by

the Governor in Council to be a terminal. Fort William and Port Arthur have been declared by Order in Council to be such a terminal. Since hospital elevators located at the head of the lakes received and shipped grain they might therefore be classed as terminal elevators. On the other hand many of the terminal elevators were equipped with machinery for drying, cleaning and other treatment of rejected and damaged grain. Under the two definitions every terminal elevator might be a hospital elevator and every hospital elevator a terminal.

The private elevators then in existence were not mentioned in that Act. There were of relatively small capacity and lacked the general facilities necessary to receive and handle grain in large quantities. They were unfitted to qualify as terminal elevators. In the circumstances, actually what happened, after the enactment of the Canada Grain Act, 1912, was that these private elevators obtained licenses from the Board of Grain Commissioners as hospital elevators. They were bonded as such. They are referred to in the Annual Report of the Board submitted January 7, 1913, as being "private hospital elevators," which neither treated nor stored grain for the public. Regulations were issued by the Board which prohibited them from taking into their elevators No. 1 Hard, No. 1 Northern and No. 2 Northern wheat. A fuller series of regulations appeared later which went farther: "Grain received into hospital elevators must be the property of the hospital elevator owners." Subsection 3, Section 124, stated that the grain being shipped out of a hospital elevator at the request of the owner or possessor should be inspected or graded but a rule issued by the Board declared that "all grain received into hospital elevators will be officially inspected in and out and officially weighed in and out." The rules issued to inspectors at hospital elevators cover cargo shipments and indicate the issue of straight grade certificates on mixed cargoes: "Deputy Inspectors shall not accept grain for sampling where two or more streams are run to the same hold, if they find there is any difference in the grain of the different streams. All grain must be finally mixed before it arrived at the point of sampling."

The private elevators took out licenses as hospital elevators and were bonded as such from 1912-13 to 1917. The report of the Board of Grain Commissioners submitted January 7, 1913, states that at that time there was only one public hospital elevator at the head of the lakes which treated grain for the public. But as this elevator in addition stored grain it was licensed and bonded as a terminal elevator rather than as a hospital elevator.

It thus comes about that elevators licensed as hospital elevators limited themselves to handling their own grain. Of these "private hospital elevators," as they were denominated by the Board of Grain Commissioners, there were eight. They did not perform a public service. They neither treated nor stored grain for the public but they enjoyed as licensed hospital elevators under the Board the right to have their grain inspected out and given a straight grade certificate. In this respect these "private hospital elevators" enjoyed greater latitude than the terminal elevators, subsection 8 of Section 126 definitely forbidding mixing in terminal elevators; Section 92 enacts that all grain shipped from any terminal or public elevator within the western inspection division shall be shipped only as graded into such elevators except when grain has deteriorated when a certificate shall be issued in accordance with the facts. Section 93 enacts that "if otherwise shipped a Western Inspection Certificate for a straight grade shall be refused and the quantity of such grades composing the mixed cargo or carload if shipped by rail, shall be written across the face of the certificate."

The net effect of the interpretations and regulations adopted by the Board of Grain Commissioners was to change the general conception of what constituted a hospital elevator and in point of fact, to limit that category to a group of private elevators handling their own grain and mixing it and shipping it out under straight grade certificates. The only restriction was that they could not

take in No. 1 Hard, No. 1 Northern, and No. 2 Northern. Under the Act itself, (Section 115, sub-section 5), no grain that had been subject to scouring or treatment by use of lime or sulphur could be graded higher than No. 3, but apart from this prohibition these mixing houses could ship out mixed grain of other grades under a straight grade certificate.

Sample Markets.

The Canada Grain Act, 1912, in sub-sections 2 and 3 of Section 57, provides that sample markets may be established and the mixing of grain permitted in connection therewith, under such rules and regulations as are recommended by the Board of Grain Commissioners and approved by the Governor-in-Council. Sub-section 4 of Section 57 enacts that sub-sections 2 and 3 shall only come into force upon proclamation of the Governor-in-Council in the Canadian Gazette, but that the proclamation shall not be made "unless and until the Governor in Council is satisfied that the proper conditions exist for bringing the said sub-section into force." The Board of Grain Commissioners submitted a report to the Privy Council and a proclamation was made by Order in Council on October 27th, 1912, providing that subsections 2 and 3 of Section 57 should go into effect the first of September, 1913. This proclamation was published in the Canadian Gazette on November 9th, 1912. In pursuance of subsection 2, Section 57, an Order in Council was passed in 1917 approving of a set of rules and regulations for sample markets. Rule 4 empowered the Board to "issue public terminal licenses and private terminal licenses." By Order in Council of 1923, the latter are now called private elevators. Rule 5 stated that "any person, firm or corporation, now operating elevators at terminal points will have the right to operate their elevators as public or private terminal elevators." Five rules cover the operations of private elevators. They are as follows:—

"(13) Grain received into private elevators must be the property of such elevators. Private elevators are prohibited from doing a public storage business; provided, however, that nothing contained herein shall curtail the right of sale of grain in store in any private elevator.

"(14) All grain received into private elevators will be officially inspected in and out, and officially weighed in and out.

"(15) Any private elevator may issue warehouse receipts for grain in store which shall be registered by the board as to quantities only, and no grain covered by any receipt so registered shall be shipped until such receipt is registered for cancellation.

"(16) Such elevators shall make out weekly or other statements for the board as required.

"(17) Notwithstanding the foregoing rules and regulations for private terminal elevators the owner or owners of grain may enter into a contract for the handling and mixing of grain in such private terminal elevators."

These rules, with certain enlargements, are those which have been governing "private hospital elevators". Private elevators are not prohibited from receiving No. 1 hard, No. 1 Northern and No. 2 Northern. Private elevators are bonded by the Board. Private elevators may issue warehouse receipts but registered by the Board as to quantities only. Private elevators may be required to and do make weekly or other statements to the Board.

While certain preparations were made by the Winnipeg Grain Exchange for a sample market, there was opposition to the proposal by the railway companies on account of the war. The Grain market was closed from 1917 to 1920. Through various causes a sample market has never become effective. Nevertheless, although the Act states that it is in connection with sample markets that the mixing of grain shall be permitted, private elevators or mixing houses have been licensed under the regulations governing sample markets and these elevators have been in operation since 1917. When the rules and regulations governing sample markets were promulgated the elevators that had hitherto been operating as "private hospital elevators" took out licenses as "private terminal elevators". During the crop year ending August 1917 the Board

issued 15 licenses for terminal elevators and 21 licenses for hospital elevators. In the following year ending August, 1918, after the Order in Council on sample markets provided for private terminal elevators there were issued 17 licenses for public terminal elevators and 17 licenses for private terminal elevators, and 3 licenses for hospital elevators. For the year ending August 1919 licenses for private terminal elevators had increased to 18 and licenses for hospital elevators had disappeared. As we have already shown there are now at the head of the lakes 25 private elevators and 10 public elevators. If this trend continues privately owned public terminal elevators may disappear at Port Arthur and Fort William.

Moreover, since 1917, the privileges of the private terminal elevators by Order in Council have been further enlarged. In 1920 Rule 17 was amended to read as follows:—

“(17) Notwithstanding the foregoing rules and regulations for private terminal elevators, the owner or owners of grain may enter into a contract for the storing or handling and mixing of grain in such private terminal elevators, and such contract may, if desired, be in the form of a warehouse receipt, which shall be registered by the board as to quantities only.”

(Amended by Order in Council P.C. 2110, dated September 2, 1920.)

The effect of this amendment is to permit private elevators or mixing houses to act as storage elevators where farmers' grain may be stored. Some private elevators have made use of this rule and store farmers' grain. These elevators are bonded by the Winnipeg Grain Exchange. They are known in the trade as “private regular” houses. Practically all the private elevators are allied or affiliated with country elevator companies and by reason of the close relationship between them it is understood that the country elevator company ships practically all its grain to the particular elevator to which it is allied if that elevator can take it in. A country elevator company may ship the bulk of the farmers' grain it handles to a public elevator for storage and its own grain to a private elevator; and another country elevator company may ship both its own grain and farmers' grain for storage into a “private regular” elevator. We will discuss later on the peculiar system of diversion and warehouse receipts this practice involves. In five or six instances the country elevator company and the private terminal company are one and the same company. In 12 instances country elevator companies hold stock in private terminals. Common shareholders may also ensure a community of interest, where there is no formal relationship.

An Order in Council passed in 1923 requires that “cars of grain belonging to farmers which are shipped without selling instructions or with instructions to hold for further orders shall not be ordered to or unloaded into any private elevator, whether by country elevator operator, commission merchant, or any other party acting for the farmer, without the express consent of the farmer given in writing; and such cars shall not be received into any such private elevator.” This requirement does not appreciably affect the practice. Country elevator companies specifically instruct their country agents to take authority as a matter of course from the farmers to unload their grain in private elevators when the shipment is made; or the authority is taken of the farmer when he receives an advance upon his shipment.

Returns from 41 country elevator companies show that with one or two exceptions they unload a certain percentage of farmers' consigned grain into private elevators. In the case of 13 companies the percentage is 90 per cent or over. In other instances country elevator companies may have affiliations only with public terminal elevators.

While the regulations of the Board of Grain Commissioners were enlarging the privileges of the private elevators the public terminal elevators were being subjected by legislation to closer restrictions. By an amendment to the Canada

Grain Act passed in 1919, (Section 95, sub-section 7), the public terminal elevator companies are required to surrender to the Crown the surplus grain found in each elevator at the annual stock-taking when such surplus is in excess of one quarter of one per cent of the gross amount received in the elevator during the crop year; the excess surplus to be sold by the Board of Grain Commissioners and the proceeds applied towards the cost of the administration of the Canada Grain Act. The object of this legislation was to take away from the elevator companies what Parliament considered to be unearned profits which fell into their hands through their operations as public warehousemen, and to apply these profits to a public purpose. It has had the effect however, of strengthening the tendency of elevators operating at the head of the lakes to elect to take out private terminal licenses in preference to public terminal licenses. Under Rules and Regulations No. 4 *re* sample markets they are able to exercise a choice. For the crop year 1919-20, 17 licenses for public terminal elevators were issued by the Board of Grain Commissioners and 17 licenses for private terminal elevators. For the crop year 1920-21, only 12 licenses for public terminal elevators were issued, but 25 licenses were issued for private terminal elevators. By a recent decision of the Exchequer Court of Canada, this amendment to the Act has been held to be *ultra vires*, but the issue is under appeal. (The King vs. Eastern Terminal Elevator Co. (1924) ex. G.R. 167.)

Under the regulations issued by the Board of Grain Commissioners for sample markets, private terminal elevators have practically all the advantages of the public terminal elevators without the obligations and restrictions placed upon the latter. Private terminal elevators may mix different grades of grain, and obtain a straight grade certificate on the same when making shipments out. They may take in farmers' grain for storage. They may issue warehouse receipts.

A difference in the receipts they issue from those issued by the public terminal elevators is that, while registered by the Board as to quantities only, they are registered by the Winnipeg Grain and Produce Exchange as to grade. With public terminal elevators, the Board registers both as to grade and quantity. So that while the public terminal elevators are bonded by the Board at 15 cents a bushel on the capacity of the house, the private terminal elevators are bonded by the Board at 8 cents a bushel on the capacity of the house, and also by the Winnipeg Grain Exchange. In the two respects where the official regulations of the Board of Grain Commissioners do not provide for the private terminal elevators, the Winnipeg Grain and Produce Exchange steps in and meets this difficulty.

The preceding sketch shows that the private terminal elevators have grown up in an irregular manner through making use of regulations intended to function under different circumstances. By this, we mean that their present position is legally based on the assumption that there are sample markets although none are at present in operation. The increase in number of private terminal elevators in recent years has taken place largely at the expense of the development of public terminal elevators.

The situation being as thus described, we are asked to deal with it in various ways. It is contended, on the one hand, that the practice of mixing should be continued, and the Statute brought into conformity with existing conditions. The opponents of the practice demand it be abolished, and all grain handled through a public terminal system of elevators. Others, again, are opposed to mixing as carried on by the companies, and suggest that if the mixing houses are to be continued, they should be operated in such a manner as to bring their profits back to the producers, as, for instance, by means of Government ownership and operation.

OBJECTIONS TO MIXING

The objections which have been urged against allowing grain to be mixed in private terminal elevators revolve around the contention that mixing lowers the quality of the grain shipped out under the official Canadian Certificate. This is the crux of the whole matter. The chain of cause and effect is traced out in this way:—"If the grain that is being exported is being lowered in quality, this must lower the reputation of Canadian grain on the English and foreign market. The British or foreign miller will give less for it, because it will be worth less to him. Canadian grain will sell, therefore, at lower prices on British markets than it would otherwise command. But the prices obtained on the Liverpool market reflects back and influences the prices made on the Winnipeg Grain Exchange. Exporters from Canada cannot offer as much for Canadian grain if they cannot obtain as much for it on the other side of the water. This depresses the Winnipeg price of grain, and that depression necessarily reaches back in its effects until it hits the producer by the lower price at which he must sell his grain, either in Winnipeg or at the country elevator." According to this line of reasoning, mixing grain works a double injury; it hurts the reputation of Canadian grain abroad, and it reduces the price the farmer receives for it at home. This is the main argument offered against mixing. All the other objections are secondary or grow out of this one.

The grain trade itself is conceived of as being indifferent to the quality of the product it handles. It is considered that all that the trade desires is uniformity of grade in the grain traded in, be it high or low. With that assured, traders will make their profit on the turnover. A large portion of the trade is known to be interested in mixing elevators. Farmers think that the mixing elevators make large profits in an illicit fashion at their expense. This is accomplished, it is claimed, by purchasing the farmers' low off-grades at very much reduced prices, and working it off into the higher grades. The ability to obtain a straight grade certificate on the mixed product facilitates the process.

Another complaint comes from the Dominion Millers' Association. The membership of this Association is composed largely of the smaller mills in Eastern Canada. It is pointed out that, during the last three years, numbers of these medium sized mills running from 50 to 100 barrels to as high as 600 and 700 barrels daily capacity have gone out of business. Among the reasons given for the reduction in number of this type of flour mill is inability to obtain straight grades of unmixed wheat. These relatively small mills urge that they perform a useful local function in supplying feed stuffs to the farmers of Ontario and Quebec. It is submitted that this is of National importance. But the small mills complain that they suffer unduly from the competition of the large mills which have their own lines of elevators in the West, and are thus able to secure the straight grade of grain as it comes from the producer. They find their inability to obtain similar grain easily a handicap in their business.

It was also pointed out that there are great difficulties in administering a system of inspection where private terminal elevators are allowed to have their grain graded out on certificate. In the case of the public terminal elevator, it is urged that the elevator does not own the grain and has little interest in attempting to influence or bring pressure to bear upon the inspector or sampler while he is at his work. But, in the case of the private terminal elevator, the elevator owner is also owner of the grain. On a large cargo shipment, say 400,000 bushels, a difference in grade between one and two Northern at a spread of 3 cents a bushel would mean a loss to it of \$12,000. Under the circumstances, it is naturally feared that pressure may be brought to bear on the inspector to set a lower grade than ought to pass.

In general, an apprehension is expressed that if the present trend at the terminals continues, the public terminal warehouses, as a real factor in the

situation, will disappear. They will all turn over and become private houses. This would produce a situation comparable to that in the United States where terminal warehousing of grain in the primary markets in the West is done almost entirely by private warehouses.

Effect of Mixing on the Quality of Canadian Export Grain.

On this question, we have had an enormous mass of evidence presented to us, bearing on every phase of the problem. The inquiry was most exhaustive, and we think conclusive. We purpose to deal with the evidence in the following order:—

- (1) The actual process of mixing employed in the private elevators.
- (2) Methods of inspection out of private and public terminal elevators.
- (3) The opinions of the chief inspecting officials.
- (4) The evidence of the Eastern millers.
- (5) The reputation of Canadian grain in Great Britain.

Methods of Mixing.

On this question, Mr. J. H. Irwin, Manager at Port Arthur and Fort William for the Western Terminal Elevator, a private terminal, was called and examined. Mr. Irwin stated that his connection with the grain business extended back to the operation of a mixing elevator at Emerson, Manitoba, during the period 1890 to 1904, where he assisted his father, who was Superintendent of the house. The Western Terminal Elevator, of which he is now manager, has a capacity of 3,000,000 bushels, divided into about 277 bins. Ninety-one bins are used specifically for cleaning, and 186 for storage. This is a larger number of bins than a public house of the same size would ordinarily have, because they have a good many bins of 1,500, 2,000 and 2,500 capacity. Practically all the bins are in use when the elevator is busy.

The witness stated that about 90 per cent of the cars coming into his house are sampled by his own man on the track before they get into the house. These cars are examined for the quality of dockage they carry. In examining them, they pick out and select the best cars of the different grades and bin them accordingly. All wheat entering the elevator is cleaned, whether it carries dockage or not, as set by the Winnipeg Inspection Department. The wheat is cleaned heavy; that is, more is taken out in the tailings than the percentage of dockage set on the certificate. Where it is intended to mix a quantity of No. 1 Northern with a quantity of No. 2 Northern and to turn the product out as a No. 1, both lots are given an extra cleaning in each instance, a certain amount of thin, shrunken or immature wheat is removed, larger screens are placed in the cleaner and extra wind is applied to accomplish this result. With respect to the proviso in the Act that No. 1 Northern must have 60 per cent of Hard Red Fife Wheat, as a rule the higher grade carries an overabundance of the quality, which is short in the lower. As a matter of fact, no shipment had been turned down in No. 1 or No. 2 for lacking the required percentage of Red Fife.

In other instances, witness stated, cars came in that had been graded No. 2 Northern because they had some specific defect such as carrying white kernels of grain, or having a sprinkling of rye or a sprinkling of durum. These cars would have weight, but would lack the percentage of Red Fife. They would be specially binned, and would eventually be raised or absorbed into the higher grade. No. 3 and the lower grades were handled much in the same way. The lower grades lent themselves more readily to selection, but the elevator did not obtain the same quantity of them. The volume of business was done in the higher grades. With respect to the smutted or tough grain, these grains were cleaned and treated, and then mixed according to the best advantage. The witness admitted that grain graded as heated had been mixed in the straight grades. It was also pointed out that the state of the market might make it

more profitable to use No. 1 Northern by mixing to make No. 2 Northern. This would depend on the demand and quality of the wheat.

This is as far as the witness was able to go in explaining the actual processes of mixing or blending grain. No detailed evidence was submitted to show what had, as a matter of fact, gone into a shipment loaded from that elevator. It was represented that this would reveal a "trade secret." When attempts were made to deduce from receipts in and shipments out the actual composition of the cargo shipment, it was pointed out that this could be merely a "paper mix," and might not correspond with the actual facts, even though the assumptions made were those most favourable to the elevator.

General returns were submitted by all the private elevators, showing receipts and shipments for the crop year 1921-2, and 1922-3. We include here the returns covering wheat submitted by the Western Elevator, the Saskatchewan Co-operative Elevator No. 2 and the Paterson Elevators "K" & "O." The first returns in each instance show all the wheat received in and shipped out, the grades being bracketed together. The second return shows the off-grades separately.

ROYAL GRAIN INQUIRY COMMISSION

WESTERN ELEVATOR—CROP YEAR 1922-23

WHEAT	Receipts	Per cent of Total	Shipments	Per cent of Total
1 Hard.....	51,613—20	0·3		
1 Northern Grades.....	15,097,536—40	80·2	16,849,886—50	88·8
2 Northern Grades.....	2,275,487—40	12·1	829,967—50	4·4
3 Northern Grades.....	1,022,713—50	5·4	979,246—00	5·1
Number 4 Grades.....	149,262—40		60,464—10	
Number 5 Grades.....	31,551—30	1·0	94,211—20	
Number 6 Grades.....	7,232—30		80,409—40	1·2
Number 5 Special Grades.....	8,339—00			
Number 5 Special.....	13,128—00	0·2		
Number 6 Special.....	1,951—30			
Feed.....	6,639—40			
Heated 1 Northern Grades.....	19,496—10			
Heated 2 Northern Grades.....	13,025—50			
Heated 3 Northern Grades.....	6,887—10	0·2		
Heated Number 5 Grades.....	1,589—50			
No. established Grade.....	1,593—20			
1 Durum Grades.....	5,071—40			
2 Durum Grades.....	40,155—20	0·6	44,601—30	0·5
3 Durum Grades.....	43,992—40		45,519—50	
Other Durum Grades.....	19,877—40			
Total.....	18,817,146—00	100·0	18,984,307—10	100·0
Stocks in store Aug. 31, 1922.....	223,185—10			
Stocks in store Aug. 31, 1923.....			72,524—40	
Grand Total.....	19,040,331—10		19,056,831—50	
1 Hard.....	51,613—20	0·27		
1 Northern Grades—				
Straight 1 Northern.....	14,948,488—40	79·44	16,849,886—50	88·8
Rejected 1 Northern.....	67,683—20	0·35		
Smutty 1 Northern.....	12,019—30	0·06		
Tough 1 Northern.....	65,687—40	0·34		
Tough Rej. 1 Nor.....	991—10			
Tough Smutty 1 Nor.....	2,666—20	0·01		
2 Northern Grades—				
Straight 2 Northern.....	2,087,274—20	11·09	829,967—50	4·4
Rejected 2 Northern.....	64,447—30	0·34		
Smutty 2 Northern.....	8,409—00	0·04		
Smutty Rej. 2 Nor.....	108—40			
Tough and Damp 2 Nor.....	111,612—40	0·59		
Tough Rej. 2 Nor.....	3,635—30	0·02		
3 Northern Grades—				
Straight 3 Northern.....	820,438—50	4·36	959,471—10	5·0
Rejected 3 Northern.....	43,705—20	0·23	19,774—50	0·1
Sprouted 3 Northern.....	6,957—50	0·04		
Smutty 3 Northern.....	335—30			
Tough and Damp 3 Nor.....	136,364—20	0·72		
Tough Rej. 3 Nor.....	6,029—30	0·03		
Tough Sprouted 3 Nor.....	8,882—30	0·05		
No. 4 Grades—				
Straight No. 4.....	120,645—30	0·64	60,464—10	0·3
Rejected No. 4.....	3,264—50	0·02		
Sprouted No. 4.....	601—50			
Smutty No. 4.....	854—40			
Tough and Damp No. 4.....	21,505—30	0·11		
Tough Rej. No. 4.....	818—20			
Tough Sprouted No. 4.....	1,572—00	0·01		
No. 5 Grades—				
Straight No. 5.....	26,106—40	0·13	94,211—20	0·5
Rejected No. 5.....	350—00			
Tough and Damp No. 5.....	5,094—50	0·03		
No. 6 Grades—				
Straight No. 6.....	7,232—30	0·04	80,409—40	0·4
Feed Grades—				
Straight Feed.....	5,616—10	0·03		
Tough Feed.....	1,023—30	0·01		
Total.....	18,642,037—50	99·0	18,894,185—50	99·5
Other Grades (see previous page).....	175,108—10	1·0	90,121—20	0·5
Grant Total.....	18,817,146—00	100·0	18,984,307—10	100·0

SASKATCHEWAN CO-OPERATIVE No. 2 ELEVATOR—CROP YEAR 1922-23

Wheat	Receipts	Per cent of Total	Shipments	Per cent of Total
1 Hard.....	38,691—40	0·4		
1 Northern Grades.....	7,590,777—00	72·5	9,242,326—10	87·9
2 Northern Grades.....	2,026,377—50	19·3	1,230,695—10	11·8
3 Northern Grades.....	744,367—10	7·1	35,931—40	0·3
No. 4.....	33,831—20	0·3		
No. 5.....	1,084—50			
Smutty Grades.....	13,054—50			
Heated and Fireburnt 1 Nor.....	4,205—40	·4	1,557—50	
Heated 2 Northern Grades.....	1,106—00			
Spring and Durum.....	23,901—20			
Total.....	10,477,397—40	100·0	10,510,510—50	100·0
Stocks in store Aug. 31, 1922.....				
Stocks in store Aug. 31, 1923.....			7,127—50	
Grant total.....	10,477,397—40		10,517,638—40	

SASKATCHEWAN CO-OPERATIVE ELEVATOR No. 2—CROP YEAR 1922-23

Wheat	Receipts	Per cent of Total	Shipments	Per cent of Total
1 Hard.....	38,691—40	0·37		
1 Northern grades—				
Straight 1 Northern.....	7,368,668—00	70·33	9,241,349—10	87·9
Rejected 1 Northern.....	70,534—00	0·67	977—00	
Tough 1 Northern.....	144,552—40	1·38		
Tough Rejected 1 Northern.....	7,022—20	0·07		
2 Northern grades—				
Straight 2 Northern.....	1,892,595—40	18·07	1,230,695—10	11·8
Rejected 2 Northern.....	31,069—20	0·30		
Tough 2 Northern.....	98,324—10	0·94		
Tough Rejected 2 Northern.....	4,388—40	0·04		
3 Northern grades—				
Straight 3 Northern.....	684,906—30	6·54	35,931—40	0·3
Rejected 3 Northern.....	16,019—20	0·15		
Tough 3 Northern.....	40,971—50	0·39		
Tough Rej. 3 Northern.....	2,469—30	0·02		
No. 4 Grades—				
Straight No. 4.....	28,668—00	0·28		
Rejected No. 4.....	1,331—00	0·01		
Tough No. 4.....	3,832—20	0·04		
Total.....	10,434,045—00	99·6	10,508,953—00	100·0
Other grades (see previous page).....	43,352—40	0·4	1,557—50	
Grand total.....	10,477,397—40	100·0	10,510,510—50	100·0

ROYAL GRAIN INQUIRY COMMISSION

PATERSON ELEVATORS "K" AND "O", CROP YEAR 1922-23

Wheat	Receipts	Per cent of Total	Shipments	Per cent of Total
1 Hard.....	35,525-50	0.3	.....	.....
1 Northern Grades.....	5,810,206-40	48.8	2,221,827-50	18.6
2 Northern Grades.....	2,158,144-10	18.1	8,157,559-00	68.2
3 Northern Grades.....	2,960,202-30	24.9	1,153,843-30	9.7
Number 4 Grades.....	428,876-10	3.6	55,054-20	0.40
Number 5 Grades.....	69,120-00	0.6	.....	.....
Number 6 Grades.....	15,030-20	0.1	.....	.....
Number 4 Grades.....	46,695-50	.....	35,089-40	.....
Number 5 Special Grades.....	33,808-10	1.0	.....	0.3
Number 6 Special.....	25,000-20	.....	.....	.....
Feed.....	7,819-10	.....	179-20	.....
Smutty 1 Nor. Grades.....	35,887-10	.....	19,400-00	.....
Smutty 2 Nor. Grades.....	80,373-50	.....	96,915-10	.....
Smutty 3 Nor. Grades.....	50,812-40	1.5	15,491-40	2.1
Smutty No. 4 Grades.....	6,747-10	.....	68,724-50	.....
Smutty No. 5 Grades.....	1,008-00	.....	51,224-50	.....
Heated 1 Nor. Grades.....	19,550-50	.....	1,133-20	.....
Heated 2 Nor. Grades.....	8,594-00	.....	1,014-10	.....
Heated 3 Nor. Grades.....	8,846-00	0.3	.....	0.7
Heated No. 4 Grades.....	3,114-40	.....	.....	.....
Heated No. 5 Grades.....	1,444-00	.....	.....	.....
1 Durum Grades.....	11,982-40	.....	.....	.....
2 Durum Grades.....	37,764-20	0.7	56,241-20	.....
3 Durum Grades.....	21,087-10	.....	15,775-40	.....
Other Durum Grades.....	13,314-30	.....	3,563-20	.....
Sample.....	927-10	.....	.....	.....
Wheat and Wild Oats.....	3,040-00	0.1	.....	.....
Alberta Red Winter Grades.....	8,991-10	.....	.....	.....
Total.....	11,903,914-30	100.0	11,953,038-00	100.0
Stocks in store Aug. 31, 1922.....	250,549-00	.....	.....	.....
Stocks in store Aug. 31, 1923.....	.....	.....	63,783-00	.....
Grand Total.....	12,154,463-30	.....	12,016,821-00	.....

PATERSON'S ELEVATOR "K" AND "O", CROP YEAR 1922-23

Wheat	Receipts	Per cent of Total	Shipments	Per cent of Total
1 Hard	35,525—50	0.30	.....
1 Northern Grades—				
Straight 1 Northern.....	5,444,238—00	45.73	2,221,827—50	18.58
Rejected 1 Northern.....	178,496—30	1.54	.....
Tough 1 Northern.....	183,448—50	1.54	.....
Tough Rej. 1 Northern.....	4,023—20	0.03	.....
2 Northern Grades—				
Straight 2 Northern.....	1,597,800—30	13.42	8,040,559—00	67.26
Rejected 2 Northern.....	210,206—40	1.77	117,000—00	0.98
Tough and Damp 2 Northern.....	335,542—40	2.82	.....
Tough Rej. 2 Northern.....	14,594—20	0.12	.....
3 Northern Grades—				
Straight 3 Northern.....	2,292,611—10	19.26	1,108,465—10	9.26
Rejected 3 Northern.....	119,824—50	1.01	45,378—20	0.37
Sprouted 3 Northern.....	61,840—00	0.52	.....
Tough and Damp 3 Northern.....	399,566—30	3.35	.....
Tough and Damp Rej. 3 Northern.....	27,018—00	0.23	.....
Tough Sprouted 3 Northern.....	59,342—00	0.50	.....
No. 4 Grades—				
Straight No. 4.....	299,095—10	2.51	55,000—00	0.45
Rejected No. 4.....	23,982—10	0.20	54—20	
Sprouted No. 4.....	15,252—20	0.13	.....
Tough No. 4.....	68,879—40	0.58	.....
Tough Rej. No. 4.....	6,456—50	0.05	.....
Tough Sprouted No. 4.....	15,210—00	0.13	.....
No. 5 Grades—				
Straight No. 5.....	56,374—30	0.47	.....
Rejected No. 5.....	1,232—00	0.01	.....
Sprouted No. 5.....	240—20	.....	.....
Tough No. 5.....	11,273—10	0.09	.....
No. 6 Grades—				
Straight No. 6.....	13,429—20	0.11	.....
Rejected No. 6.....	67—30	.....	.....
Tough No. 6.....	1,533—30	0.01	.....
Feed Grades—				
Straight Feed.....	7,780—00	0.07	179—20	
Tough Feed.....	39—10	.....	.....
Total.....	11,484,924—50	96.5	11,588,464—00	96.9
Other grades (see previous page).....	418,989—40	3.5	364,574—00	3.1
Grand Total.....	11,903,914—30	100.0	11,953,038—00	100.0

We also add a summary of the total handlings of wheat by grades at private elevators at Fort William and Port Arthur during the crop year 1922-23. The second shows the off-grades.

SUMMARY OF TOTAL HANDLINGS OF GRAIN, BY GRADES, AT PRIVATE ELEVATORS, FORT WILLIAM AND PORT ARTHUR, DURING THE CROP YEAR 1922-23

Wheat	Receipts	Per cent of Total	Shipments	Per cent of Total
1 Hard.....	228,805-20	0.2	11,153-40	64.4
1 Northern Grades.....	70,883,531-20	62.8	73,577,295-20	
2 Northern Grades.....	20,286,709-40	18.0	24,709,311-30	21.6
3 Northern Grades.....	16,988,554-10	15.0	13,567,507-00	11.9
Number 4 Grades.....	2,030,433-40	1.8	939,893-20	0.8
Number 5 Grades.....	538,102-40	0.5	424,429-50	0.3
Number 6 Grades.....	193,465-10	0.2	153,944-30	0.1
*No. 4 Special Grades.....	99,809-00		47,689-40	
*No. 5 Special Grades.....	86,119-50	0.3	12,550-30	0.1
*No. 6 Special Grades.....	53,620-10		1,100-00	
Feed.....	112,714-50		57,853-40	
Smutty 1 Nor. Grades.....	118,409-00		21,947-30	
Smutty 2 Nor. Grades.....	184,893-00		107,209-20	
Smutty 3 Nor. Grades.....	133,889-20	0.4	73,830-40	0.3
Smutty Number 4 Grades.....	11,305-10		68,724-50	
Smutty Number 5 Grades.....	1,008-00		51,808-40	
Heated 1 Nor. Grades.....	96,762-10		11,631-40	
Heated 2 Nor. Grades.....	74,196-00		12,740-30	
Heated 3 Nor. Grades.....	50,194-40		21,118-30	
Heated No. 4 Grades.....	15,618-30	0.5	2,477-20	0.1
Heated No. 5 Grades.....	7,334-30		5,001-30	
Heated Number 6.....	597-20			
Condemned.....	20,639-40		11,673-00	
1 Durum Grades.....	30,116-00		10,889-40	
2 Durum Grades.....	168,947-10	0.5	201,273-10	0.4
3 Durum Grades.....	166,521-40		156,262-30	
Other Durum Grades.....	140,587-50		31,821-40	
Sample.....	133,814-00			
Alberta Red Winter Grades.....	13,096-00			
No Established Grade.....	2,479-50	0.1		
Wheat and weed seeds.....	8,680-40			
Total.....	112,880,956-20	100.0	114,291,139-30	100.0
Stock in store Aug. 31, 1922.....	1,604,167-00			
Stock in store Aug. 31, 1923.....			433,420-00	
Grand Total.....	114,485,123-20		114,724,559-30	

*The special grades are early arrivals of the 1923 crop, of which shipments before the end of August were small although fair quantities were received.

SUMMARY OF TOTAL HANDLINGS OF GRAIN, BY GRADES, AT PRIVATE
TERMINAL ELEVATORS, FORT WILLIAM AND PORT ARTHUR, DURING
THE CROP YEAR 1922-23—Continued

Wheat	Receipts	Per cent of Total	Shipments	Per cent of Total
1 Hard.....	228,805—20	0·20	11,153—40	0·01
1 Northern Grades—				
Straight 1 Nor.....	68,761,359—10	60·92	73,487,759—40	64·31
Rejected 1 Nor.....	1,154,536—00	1·02	52,402—20	0·05
Tough and Damp 1 Nor.....	936,939—00	0·83	37,133—20	0·03
Tough and Damp Rej. 1 Nor.....	30,697—10	0·03	.....	.....
2 Northern Grades—				
Straight 2 Nor.....	17,841,833—10	15·81	24,235,973—00	21·21
Rejected 2 Nor.....	949,653—40	0·84	420,857—10	0·37
Tough and Damp 2 Nor.....	1,426,404—20	1·26	52,481—20	0·05
Tough and Damp Rej. 2 Nor.....	67,285—50	0·06	.....	.....
Sprouted 2 Nor.....	1,424	.....	.....	.....
3 Northern Grades—				
Straight 3 Nor.....	14,115,928—10	12·52	13,320,290—10	11·65
Rejected 3 Nor.....	610,423—00	0·54	93,516—10	0·08
Tough and Damp 3 Nor.....	1,755,526—40	1·56	121,610—30	0·11
Tough and Damp Rej. 3 Nor.....	104,371—20	0·09	1,868—20	.....
Sprouted 3 Nor.....	196,655—30	0·17	22,899—40	0·02
Tough and Damp Sprouted 3 Nor.....	205,649—30	0·18	6,738—20	.....
No. 4 Grades—				
Straight No. 4.....	1,550,134—50	1·38	921,457—50	0·81
Rejected No. 4.....	74,302—20	0·07	7,802—10	.....
Sprouted No. 4.....	48,029—30	0·04	5,533—20	.....
Tough and Damp No. 4.....	278,672—20	0·25	5,100—00	.....
Tough and Damp Rej. No. 4.....	31,714—00	0·03	.....	.....
Tough Sprouted No. 4.....	46,726—00	0·04	.....	.....
No. 5 Grades—				
Straight No. 5.....	476,156—10	0·42	420,603—40	0·37
Rejected No. 5.....	9,553—10	.....	2,940—00	.....
Sprouted No. 5.....	2,990—20	.....	.....	.....
Tough and Damp No. 5.....	46,046—00	0·04	.....	.....
Tough Rej. No. 5.....	1,954—40	.....	1,470—00	.....
Tough Sprouted No. 5.....	1,402—20	.....	.....	.....
No. 6 Grades—				
Straight No. 6.....	166,811—50	0·15	153,234—40	0·13
Rejected No. 6.....	67—30	.....	.....	.....
Tough No. 6.....	25,496—40	0·02	709—50	.....
Tough Rejected No. 6.....	1,089—10	.....	.....	.....
Feed Grades—				
Straight Feed.....	99,109—20	0·09	56,422—00	0·05
Tough Feed.....	13,605—30	0·01	1,431—40	.....
Other Grades (see previous page).....	111,261,353—30 1,619,603—10	98·57 1·43	113,441,388—50 849,750—40	99·25 0·75
Grand Total.....	112,880,956—40	100·0	114,291,139—30	100·0

As the crop varies considerably from year to year, these returns only illustrate results for the year in question. The variations in the crop from year to year, as shown by the following table of inward inspections in the Western Inspection Division for ten years.—

INWARD INSPECTION

PERCENTAGES, AS TO GRADES, TOTAL CARS INSPECTED, WESTERN INSPECTION DIVISION

	1912-13	1913-14	1914-15	1915-16	1916-17	1917-18
1 Hard.....	0.19	0.57	0.02	0.76	0.05	0.84
1 Northern.....	10.66	55.48	16.88	49.11	10.94	50.26
2 Northern.....	10.85	56.05	16.90	49.87	10.99	51.10
	34.22	26.97	34.20	17.46	19.34	20.43
3 Northern.....	45.07	83.02	51.10	67.33	30.33	71.53
	24.04	6.75	24.09	12.98	18.10	12.73
Number 4 Grades.....	69.11	89.77	75.19	80.31	48.43	84.26
	5.00	1.41	12.61	5.98	8.67	4.81
Number 4 Special.....	74.11	91.18	87.80	86.29	57.10	89.07
					3.66	
Number 5 Grade.....	74.11	91.18	87.80	86.29	60.76	89.07
	1.19	0.36	3.41	1.95	4.52	3.00
Number 5 Special.....	75.30	91.54	91.21	88.24	65.28	92.07
					3.17	
Number 6 Grade.....	75.30	91.54	91.21	88.24	68.45	92.07
	0.91	0.17	0.69	0.58	2.79	2.05
Number 6 Special.....	76.21	91.71	91.90	88.82	71.24	94.12
					1.79	
Feed.....	76.21	91.71	91.90	88.82	73.03	94.12
	0.30	0.02	0.10	0.13	4.08	0.62
Rejected.....	76.51	91.73	92.00	88.95	77.11	94.74
	2.88	4.23	2.89	2.13	1.90	2.46
No grade.....	79.39	95.96	94.89	91.08	79.01	97.20
	19.33	0.81	3.91	7.68	20.45	2.18
Smutty.....	98.72	96.77	98.80	98.76	99.46	99.38
	1.09	3.09	1.13	1.18	0.46	0.52
Heated and Condemned.....	99.81	99.86	99.93	99.94	99.92	99.90
	0.02	0.09	0.06	0.03	0.05	
No established grade.....	99.83	99.95	99.99	99.97	99.97	99.90
					0.03	0.10
Durum.....	99.83	99.95	99.99	99.97	100.00	100.00
	0.04	0.01		0.3		
B.C. 1, 2 and 3 Spring.....	99.87	99.96	99.99	100.00	100.00	100.00
Rejected, sprouted.....	99.87	99.96	99.99	100.00	100.00	100.00
Miscellaneous.....	99.87	99.96	99.99	100.00	100.00	100.00
Total.....	99.87	99.96	99.99	100.00	100.00	100.00

PERCENTAGE AS TO GRADES, TOTAL CARS INSPECTED, WESTERN INSPECTION DIVISION

Grades	1917-18	1918-19	1919-20	1920-21	1921-22	1922-23
1 Hard.....	0.84	0.55	0.13	0.09	1.21	0.33
1 Northern.....	50.26	39.86	35.45	38.06	29.87	65.65
2 Northern.....	51.10 20.43	40.41 17.11	35.58 22.59	38.15 23.68	31.08 20.30	65.98 16.80
3 Northern.....	71.53 12.73	57.52 15.90	58.17 14.53	61.83 24.47	51.38 23.81	82.78 9.31
Number 4 Grade.....	84.26 4.81	73.42 10.28	72.70 1.27	86.30 5.32	75.19 8.62	92.09 0.77
Number 4 Special.....	89.07	83.70	73.97 3.72	91.62	83.81	92.86 0.15
Number 5 Grade.....	89.07 3.00	83.70 5.12	77.69 0.68	91.62 0.90	83.81 2.44	93.01 0.21
Number 5 Special.....	92.07	88.82	78.37 0.87	92.52	86.25	93.22 0.11
Number 6 Grade.....	92.07 2.05	88.82 3.33	79.24 0.21	92.52 0.29	86.25 0.71	93.33 0.06
Number 6 Special.....	94.12	92.15	79.45 0.20	92.81	86.96	93.39 0.10
Feed.....	94.12 0.62	92.15 0.87	79.65 0.16	92.81 0.05	86.96 0.18	93.49 0.07
Rejected.....	94.74 2.46	93.02 1.85	79.81 3.77	92.86 1.96	87.14 1.49	93.56 2.13
No grade.....	97.20 2.18	94.87 4.16	83.58 15.95	94.82 4.68	88.63 5.98	95.69 2.63
Smutty.....	99.38 0.52	99.03 0.73	99.53 0.28	99.50 0.28	94.61 0.34	98.32 0.33
Heated and Condemned.....	99.90	99.76	99.81	99.78	94.95	98.65 0.02
No established grade.....	99.90 0.10	99.76 0.08	99.81 0.03	99.78 0.03	94.95 0.02	98.67
Durum.....	100.00	99.84	99.84 0.07	99.18 0.09	94.97 0.44	98.67 1.25
B.C. 1, 2 and 3 spring.....	100.00	99.84 0.16	99.91 0.09	99.90 0.10	95.41 0.02	99.92
Rejected, sprouted.....	100.00	100.00	100.00	100.00	95.43 4.55	99.92 0.03
Miscellaneous.....	100.00	100.00	100.00	100.00	99.98 0.02	99.95 0.05
Total.....	100.00	100.00	100.00	100.00	100.00	100.00

These variations from year to year naturally affect greatly the methods and output of the mixing houses.

Inspection out of the Private and Public Terminals.

Section 99 of the Canada Grain Act provides that when grain shipped from any elevator is being systematically reduced in quality below the general average quality of the grain of similar grades in the bins of the terminal elevators it shall not be allowed to pass inspection except on a lower grade. This section is not definitely connected by any reference in the Act or by rule to the private elevators. The section goes back to 1904, before the private terminals were in existence. In the Canada Grain Act, 1912, the Hospital elevators are brought under it. However, in practice, the Inspection Department have always interpreted this rule to apply to the private terminals. Mr. J. D. Fraser, Assistant Chief Inspector for Canada, stated that instructions were given to the deputy inspectors at Fort William and Port Arthur to this effect. Mr. Fraser said that he considered "mixing" and "systematically reducing" to be the same thing.

Mr. F. Symes, inspector in charge of terminals at Fort William and Port Arthur, said that he received certain standard samples from the Chief Inspector's office at Winnipeg which he described as being the minimum, as he understood it, of the grades of both the standard and the commercial grades. These standard samples arrived sometime in October; until that time, they were working practically on last year's standards. These standard samples were sent by Mr. Symes out to all the public terminals for the purpose of inspection in and inspection out.

As a guide to the deputy inspectors at the private terminals, to guide them in inspecting out, Mr. Symes said he sent to them a composite sample which was a little better than the standard sample. This sample was composed of three parts of the Winnipeg standard as set by Chief Inspector Serls, and one part of the average taken by himself from the public terminal houses on the shipments that had taken place up to the date on which he made his sample. This composite sample was the actual sample employed by the deputy inspectors inspecting out at the private terminals. The standard sample set by Mr. Serls and the composite sample made up by Mr. Symes were submitted for inspection to Messrs. D. D. Young, technical adviser to the Commission, C. B. Watts, representing the Dominion Millers' Association and Mr. Stuart Langell, an inspector. These three men agreed that the official standard which came from Mr. Serls and the other were practically alike, except that the official standard had a little brighter colour. The composite sample weighed sixty-four pounds, and the standard sample sixty-three and one-half pounds. Mr. Watts stated that he considered the composite sample had a little more of what might be called weathered wheat in it, (bleached) and was a shade lighter in colour than the standard. Mr. Young and Mr. Watts agreed that if they were picking for a mill they would pick the official standard sample, rather than the composite sample. Mr. Symes stated that his composite sample was the only sample made up for grading out of the private terminals, and it was intended to be a guide for the men to keep their shipments fairly uniform. His instructions were that the inspectors were to keep up to the composite sample as nearly as they could, consistent with sound judgment and common sense. He had shown the samples to Mr. Serls, the Chief Inspector, who agreed that it was all right to put them out. He stated that he had seen samples of cargoes going out below the composite samples, and samples of cargoes going out better. The sample was merely a guide. In reply to a query as to what he would do if a sample of a cargo from a mixing house were laid before him that weighed sixty pounds and had sixty per cent of hard Red Fife Wheat in it, was otherwise sound and clean, and, in brief, complied with definition of One Northern found in the Act, Mr. Symes said he would have to pass it. He added that he had never been called upon to do so. Following instructions from the Chief Inspector, Mr. Symes said he had endeavoured to keep the grain coming out of the private terminals as

close to the average as he could. He pointed out that he had turned down samples that he believed were not up to the average of the composite sample, and the grade had been raised on an appeal to a Survey Board. These samples were below the average going out of the public terminal, but above the minimum of the grade defined by the Act.

A list of appeals to the Survey Board for that season showed that there were twenty-three appeals in all against grades and dockage placed upon grain being shipped out of the private terminals. In twelve instances, the inspector's grade was sustained; in four cases, the dockage was struck off; on seven occasions the grade was raised.

The evidence of a number of the deputy inspectors employed in grading out shipments from the private terminal elevators confirmed Mr. Symes' statements as to practice. It was clearly proved that the problem that confronts the inspector, inspection out shipments at the private terminal elevators, is not whether the grain turned out is up to the legal minimum of the grade as set forth in the Act, but whether the grain is up to the average of shipments out of the public terminals. With respect to the public terminals, while all agreed that a cargo of No. 1 or No. 2 Northern being shipped out, down to the minimum of the grade as defined in the Act, must receive that grade, yet such a shipment, it was said, never occurred. An average considerably above the minimum was, in point of fact, shipped out of the public terminals.

With respect to the official standard samples sent to the public terminals by the Chief Inspector, Mr. Serls, it was pointed out that, while it was referred to as the minimum of the grade, actually it weighed $63\frac{1}{2}$ pounds to the bushel, and contained more than 60 per cent of hard Red Fife Wheat. It was, therefore, higher in quality than the minimum of the grade set forth in the Grain Act. It was explained that for the year 1922-23, on account of the quality of the crop, it would be difficult to obtain sound hard Red Fife Wheat that did not weigh more than 60 pounds to the measured bushel. The official standard of No. 1 Northern and No. 2 Northern was a minimum only in this sense; having regard to the quality of the crop this was what might be expected as the minimum of quality that would be delivered on these grades.

Opinion of the Chief Inspecting Officials.

During the course of our investigation into this question, various tests or demonstrations of the quality of mixed grain as compared with the general run of the grades found in the public terminals were presented to us. We do not attach much importance to this evidence. All it shows is that very excellent mixtures can be made, and that, on the other hand, grain may be so mixed as to deteriorate its quality seriously. Mr. Symes stated that the best shipment of No. 1 Northern wheat he had seen out of the Lake ports in the autumn of 1923 was shipped from a private terminal elevator. On the other hand, we had evidence presented to us at Buffalo by the Washburn Crosby Milling Co. that a certain shipment they received from a private house was much below what it purported to be. It appears, however, that in this last case fraud was proved on the part of the inspector, who was discharged. Further, the private elevator did not, in the succeeding year, obtain a license. It is obvious that a case of this nature, into which fraud enters, while it may illustrate possibilities of wrong-doing, does not in itself throw any light on the real question at issue: the quality of the product which obtains an honest certificate of grade.

We have, however, given consideration to the average condition under which cargoes are shipped out of the private terminals. We have sought to determine, on the average, how the quality of the grain they ship out compares with that shipped out of the public terminals. It was the opinion of Mr. Serls, to whom samples of all cargo shipments are sent for review, as it was also the opinion of Mr. Fraser and Mr. Symes, that the average from the public terminals would

probably be a little better than the average from all of the private elevators for the last two years. Mr. Serls said, "I might say that I would see some cargo samples probably from the private elevators that would be, if anything, better than the public terminals, and then I would see some that would run lower, but the average from the public terminals would probably run more even." This last year, Mr. Serls said that the private elevator shipments were more uniform, and came nearer to the public terminals than they did the previous year. This conclusion does not go beyond an opinion on the average grades being shipped out of the public and private terminals. The evidence of Mr. Fraser, Assistant General Inspector for Canada is that the average of the grades going through Winnipeg is higher than the average in the public terminal elevators. The explanation he gave is that the Winnipeg average is made up of the inspection, of all cars. The difference is caused by the better class of the higher qualities of No. 1 Northern being selected by mills and other elevators. As an instance, Mr. Fraser said that a mill might be shipping wheat from the country itself. It would take the better qualities of the grain into the mill and let the minimum, No. 1 Northern go through to the public house. That would lower the general average in the bins of the public terminal.

Moisture Content of Grain from the Private Terminals.

At Montreal and Toronto, we heard evidence from the western millers. Their evidence was that they preferred where possible to buy their grain out of the public terminals, because they had found it of a more satisfactory character. One particular feature of their complaint is worthy of consideration. This relates to the moisture content of the grain. The moisture test applied to grain is a warehousing test. If it will stand warehousing, it will pass in the grade to which it otherwise belongs. The ordinary test is by feeling it in the hand. If there is any doubt, a moisture tester is used. The rule is that all wheat that contains 14 per cent of moisture up to 17 per cent shall be graded tough to the grade it belongs. If it contains over 17 per cent, it shall be graded damp. It is obvious that there may be considerable variation in the moisture content of grain before it actually could be graded as tough. At Montreal, Mr. F. C. Cornell, for the Canadian National Millers' Association, which he stated represented pretty close to 85 per cent of the milling capacity of the country, submitted the results of moisture test on a shipment of 38 carloads of wheat direct from the northwest. These cars showed a variation in moisture content of from 9.4 to 14.5 or over 5 per cent. The average for the total shipment, however, was 11.5. A cargo shipment—a boat load transhipped from Port Colborne—showed an average moisture content of 13.3 or about 2 per cent greater. This meant a difference in value of almost 2 cents a bushel. However, it was not shown that this boat load came from the private terminals. Mr. W. B. Woods, President of the Dominion Flour Mills, supported Mr. Cornell and claimed that the tough wheat at the private terminals was being mixed in with the straight grades. Thus, twelve cars of No. 1 Northern, with a moisture content of 12 per cent, he said, could be mixed with 9 cars of tough No. 1 Northern with 16 per cent moisture, and the whole 21 cars would inspect as straight No. 1. Northern, with an average moisture content of 13.7 per cent. "The Miller", it was complained, "was paying for 4 per cent of water on nine cars, or say 540 bushels of water that the farmer was not paid for." Under the general rules governing moisture content, grain might be shipped out of private terminals carrying a moisture content, up to 14 per cent. The returns submitted show that they receive considerable quantities of tough wheat, but there are practically no shipments out. The evidence of Mr. Irwin, Manager of the Western Terminal Elevator, a private house, is that they keep no record of the quantities of grain that they dry for themselves. His statement on examination was that they shipped no grain as straight that was carrying

over 14 per cent of moisture, but he admitted that they did add tough wheat to the straight grade without drying it.

Reputation of Canadian Grain in Great Britain.

From time to time, at various points in the West, evidence was presented to the effect that farmers had sent samples of their wheat to grain merchants or millers in England, and had been informed that their samples were much superior to the Canadian wheat obtainable over there. The conclusion was always drawn that our wheat was being deteriorated by mixing. It is difficult to weigh incidental evidence of this nature. It is not possible to ascertain if the sample sent from Canada is the equivalent of the average of the grade or better, nor is it possible to be certain that the grain with which it is placed in comparison has actually reached England with a Canadian certificate. On the other hand, we had the evidence of Mr. Serls, who had just returned from England, where he had been on a mission of investigation. Mr. Serls went over to investigate the mixing of Canadian wheat with American in transit. Mr. Serls said that he investigated six complaints, one of which dealt, however, with a shipment of all Canadian grain. In this one instance, the grain had come from a public terminal, and, after careful investigation, he had concluded it had been mixed after it had left Fort William. In general, the Canadian Official Certificate had a high standing, and all grain through Canadian channels had been very satisfactory, and they were well pleased with it. Mr. Serls, it is true, was not investigating the general quality and reputation of Canadian wheat on the British market, but it is inconceivable that if there had been any general and serious deterioration of Canadian grain on the British market he would not have heard of it. This view is confirmed by an experience which he related concerning the crop of 1921. He said, "The crop in 1921 had a good deal of this bleached and sprouted wheat. It was No. 1 Northern wheat, practically all of it, before it got weathered. I heard so much—it had been poured down my throat, I might say, so long, that this bleached wheat, sprouted wheat, was equal to the best wheat. Against my better judgment I allowed the benefit of the doubt to go with the producer, to the extent that I let that into No. 3 Northern, bleached wheat and a certain percentage of sprouted wheat. Well, the effect of this was this: in October the spread between 1 and 3 Northern started off at about five and a half cents. It gradually increased as the season went till in May that spread came to 14 cents and over. And I might go on and tell that when in England after that, at every point I visited that was the first thing that was thrown in my face."

We heard evidence from Mr. Thos. Sales, M.P., for Saltcoats, who stated that he had been in the Old Country in 1923, and that while there the Manager of one of the largest mills in the Old Country had asked him "What is the matter with your Canadian wheat the last three years? Well—it is not anything like it used to be before the war", and as near as Mr. Sales could quote his words he added, "neither in yield, in strength, or absorption."

In view of the importance of the question, after the sittings of the Commission had finished, Mr. Commissioner Rutherford made a visit to England specially to investigate this matter. Commissioner Rutherford's report, after an extended survey of the situation, is attached to this report.

Undoubtedly from time to time, English millers may be found who may think Canadian grain has deteriorated, but both Chief Inspector Serls and Commissioner Rutherford were on official mission, charged to meet the trade and the millers. It was known they were in England for that purpose. They were in the way of hearing complaints if there were any serious ones to be made. Both agree that the reputation of Canadian grain stands high on the English market.

In general we find—

(1) That the quality of the grain shipped out of the mixing houses is slightly lower than that shipped out of the public terminals.

(2) It may be argued that in view of the use made of tough wheat that grain from the mixing houses carries a higher percentage of moisture, but we have no evidence that such is the case.

(3) We cannot say from the evidence we have of conditions overseas that the quality or reputation of Canada's grain and therefore the price, has suffered in Britain as a result of mixing in private elevators being allowed.

PRICES AND PROFITS

Apart from the main argument that the private mixing houses were lowering the quality of grain being exported under the Canadian Certificate, various arguments and some evidence was adduced which touch the prices of grain received by the producer. These arguments, if sound, are of some importance, and must be examined.

Flooding the Market with No. 1 Northern:

It is alleged that since more No. 1 Northern is put on the market as a result of the operations of the mixing houses the tendency is to flood the market and thus depress the general level of prices for the contract grades. The economic effects of this is alleged to be that the grower of high class grain suffers to the advantage of the grower of poor grain, who may benefit through having his poorer stuff purchased by the mixing houses. The argument assumes that the world's market for high class wheat is narrower than it actually is. There is an enormous demand in Western Europe and Great Britain for wheat and flour. Price fluctuations do take place of considerable magnitude on this market, but this fluctuation is in response to the world supply of wheat or flour available for export set over against needs and the ability to purchase.

For the crop year 1922-23, Canada's total exports of wheat and wheat flour reduced to bushels at $4\frac{1}{2}$ bushels to the barrel was 279,492,557. The total shipments from the private elevators was 114,291,139 bushels. Of that quantity, 73,577,295 bushels were One Northern and 11,153 bushels of No. 1 Hard, or a total of 73,588,448 of One Northern or better. The private elevators received 70,883,531 bushels of No. 1 Northern and 228,805 bushels of No. 1 Hard, a total of 71,112,336 bushels of No. 1 Northern or better. Subtraction shows that the actual increase of No. 1 Northern or better, due to the operations of the mixing houses, amounts to 2,476,112 bushels. This additional quantity of high grade wheat is altogether too small to have any appreciable effect on the ruling price for No. 1 Northern in Liverpool.

The Spread between Contract Grades and the Lower and Off Grades.

(1) It is contended that the private elevators by providing a market for the lower and off grades keep the market price of these qualities of wheat at a higher level. The contention is difficult to prove or disprove. The market for these grades has become organized around the mixing houses. If these were swept away, there might, until other organizations replaced them, be a greater spread between the prices paid for the top grades and the lower grades.

But it is claimed that there is a demand in the market for lower grades elsewhere. Mr. C. B. Watts' statement on this point is as follows: "Our small millers cannot possibly make good flour out of low grade wheat, and they haven't the export trade for low grade flour, but take the mills in making their high grade flour. They take up what they call a 'clear' or '2nd clear'. In some cases it is called 'Second Patents' or something like that. They have these clears that they use the low grade wheat for and mix it in and make an inferior

flour for export purposes for which there is a big demand in Europe. Some of the mills that I speak of buy this low grade wheat and grind it straight into low grade flour for Europe, as I said, mixing in a little No. 3 or possibly No. 2 in the low grades to make the flour uniform. So there will always be a demand from the old countries for the export of these low grade wheats."

On the other hand, the evidence of the large Western millers is that they are unable to use the lower grades to any degree. They find it more economical where a low grade flour is desired for export to use a high grade wheat and change the mode of extraction. Of course, the composition of the crop affects the percentages of each grade used each year.

Mr. N. J. Breen, Western General Manager of the Lake of the Woods Milling Company said they had milled about 14,000,000 bushels the preceding year. The percentages of the grades were as follows:—

No. 1 Northern..	56.6
No. 2 Northern..	25.2
No. 3 Northern..	16.3
Number Four..	1.3
Number Five..	0.6
	100.0

J. W. Horn, Assistant General Manager of the Western Canada Flour Mills, reported on 18 months grinding of 15,366,000 bushels.

No. 1 Northern..	73.9
No. 2 Northern..	14.7
No. 3 Northern..	9.2
Number Four, Five and Six..	2.2
	100.0

Mr. Horn said a fairly decent flour might be made out of 4, 5 and 6, but it would be commercial suicide economically to attempt the business.

Similar evidence was given by Mr. R. R. Dobell, Western Manager of the Ogilvie Flour Mills Company. Mr. Dobell gave figures for the Winnipeg mill only; these showed:—

No. 1 Northern..	38.26
No. 2 Northern..	21.31
No. 3 Northern..	39.89
Number Four..	0.54
	100.0

He stated they had made use of a parcel of No. 4 wheat as an experimental grinding, but found they could not make flour out of it, of the kind generally known in Canada. They were unable to use it in their brands of flour.

Winnipeg inspections for the crop year 1922-23 show that 7.01 per cent of the grades of the total crop were below No. 3 Northern so that it is evident that the large Western Mills were not absorbing a proportional share of the lower grades. While they handled the lower grades in their country elevators, it was stated the cars were sent forward to be sold at the head of the Lakes. There is no specific evidence to show that the Canadian Mills can provide a market sufficiently broad to absorb the grain offering in the lower grades. Of course it is possible that mills abroad might absorb this wheat if the trade were organized to export it to them.

(2) Statistics showing the range of prices for the various grades were submitted covering a period of eight years. On the whole, these statistics did not reveal any appreciable difference in the spread between the prices paid for wheat in the contract grades, as compared with those paid for wheat in the off or lower grades. It is impossible to draw with certainty any valid conclusions from this fact. The conditions of relative demand change from year to year,

due to the quality of the crop in the higher grades, and the proportion that the quantity of wheat in the higher grades bears to that in the lower. When the bulk of the crop is of the contract grades, there is a tendency towards a rise in price of the lower or off grades available for mixing. Under these circumstances, the demand from the mixing houses probably tends to narrow the spread in prices between the higher and lower or off grades. On the other hand, where there is a relatively large proportion of the crop below the contract grades, competition will tend to focus on the demand for No. 1, 2 and 3 Northern. Under the circumstances, on account of the large supply of the poorer grades of wheat, the spread between the higher grades and the lower or off grades will be widened rather than narrowed, by the competition of the mixing houses. The problem will be to obtain high grade wheat with which to mix the poorer grades.

Effect of Private Elevators on the Market and Cash Prices.

It is generally agreed that a cardinal factor in the profits that elevators make is the volume handled. It is the desire of the owner of every elevator, private or public, to handle the maximum capacity his house or houses will permit. The methods by which the private elevator companies secure the grain which goes through their houses may be reduced to four: (1) The grain handled may be altogether their own grain purchased for them by track buyers, or by agents at a line of country elevators, which they control, or with which they are in affiliation. In these instances, the prices paid to the farmer are determined by general conditions governing street and track prices at country points. The conditions have been surveyed elsewhere. It does not appear that the prices paid for grain purchased in this manner by the private elevators exert any direct influences upon the price the farmer receives except in so far as the ability to mix grain in a private terminal enables them to compete more effectively for grain in the country by offering higher prices there. Two of the country elevator companies state that their mixing house business permits them to do this.

(2) The private elevator may enter the market at Winnipeg and buy track grain, or grain when it is billed and inspected before it has been unloaded in a public terminal elevator. The grain may then be ordered into their terminal. Purchases of this nature are directly reflected in the market prices for cash wheat on the Winnipeg Grain Exchange.

These two methods were the only methods that were open to private terminals until 1920. The rules, as laid down in 1917, did not permit them to handle grain that was not their own. But, as we have already noted, in 1920 Rule 17 was amended to enable private elevators to take in farmers' grain into store. In 1923, Rule 17 was further amended to require that cars belonging to a farmer should not be taken in without the express consent of the farmer, given in writing.

The amendments to Rule 17 make possible two other methods by which a private terminal can secure grain:

(3) In the first place, they can store grain belonging to farmers in the private mixing house. Since 1923, the companies use a form of shipping instructions which authorizes the country elevator company to have the farmers' grain unloaded at any mill or elevator in the Western Inspection Division. Under this authorization, the country elevator company can order the car into its own private terminal elevator or into the one with which it is affiliated. The farmer may order the car to be sold before the ten days' free storage has elapsed, or he may hold it in storage for some time. In any event, settlement is made on the basis of the cash price for the day on which the farmer orders the grain to be sold. If the period exceeds the free storage period, storage is charged. During this period, the private terminal or mill is said to be "carrying" the grain.

If in any case it should happen that a farmer's car is placed in a private terminal elevator without his consent, and he objects, the elevator company will provide him with a warehouse receipt for grain of the same grade in store in a public terminal.

Where the method is carried on with the consent of the farmer, obtained at the time of shipment, it allows the elevator company to select the best cars of any grade or the cars most suitable for mixing purposes for its own terminal. In this instance, private elevators do not apparently exert much influence on the price. They merely settle for the wheat at the ruling price of the day that the farmer decides to sell. The market may be steadied a little in that if a large number of farmers ordered their wheat to be sold on the same day the sale of these cars might cause a fall in price, whereas under the system of diversion it simply means that settlements on the cash price of that day are made between the farmers and the private terminals where the grain is in store.

On the other hand, the private elevators obtain this grain at the time they actually want it. It may be to fill export orders or because it is a good car to blend, or it may be simply to increase the volume of their handlings. As private elevators they are not compelled to receive grain for storage. But when they wish to accumulate large amounts, they are not required to go into the market and offer a price that will induce the farmer to part with his grain. It is true they engage themselves to settle for the grain on the day the farmer may select, but they secure the grain as a result of his determination to sell not through their own determination to buy being exerted in a bid for grain in the cash market. Incidentally, while the grain remains in their elevator waiting sale, or perhaps, to speak more accurately, settlement-storage after the ten days period is being charged against it, or, rather, is being earned on it for the private elevator. Meanwhile, the grain can be used for the operation of the mixing house.

Diversions and Premiums.

(4) This brings us to the method of securing grain by diversion. The evidence shows that each year approximately 25,000,000 bushels of farmers' grain is placed in the hands of the independent commission merchants to sell. When the shipment is made to the order of the commission merchant, a form of consent is usually attached, and signed by the farmer, so that the commission merchant can direct the car into a private elevator or mill, even though the consignor does not wish to sell the car immediately.

There are some private elevator operators who are not well equipped for the purchase of grain through allied country elevators. Further, the quality of the grain coming from their own country connection may not give all the grades suitable for mixing. Also, certain private elevator operators accumulate parcels of grain of a certain quality for the purpose of selling it to millers. The mills themselves are in the market for the higher grades which they desire to grind. Finally, the very rapid increase in the number of private terminals leads to keener competition between themselves to secure grain for these plants, in order to secure a maximum volume of handling.

For all these reasons there is a market for wheat in Winnipeg before it has been placed in storage in the public terminals. This market might be called the premium market or the diversion market. It will be recalled that the Canada Grain Act, 1912 provided that mixing might take place in connection with sample markets. While an open sample market has not become an effective factor in the exchange this is the substitute that has appeared.

Mr. C. E. Graham, of Blackburn, Mills & Graham, Commission Merchants, in his evidence, stated that the practice was increasing of taking samples of what are called the off-grades around and showing it to possible purchasers. This work, he said, occupied most of the time of the senior member of his firm.

Samples are also often given to the brokers to do the same thing. The purpose is to secure, if possible, a premium over the regular market price. The witness stated that sixty per cent of his consigned grain would go into the public terminals, the other forty per cent would, on their orders and with the consent of the farmer, be diverted as a result of this practice into the private elevators or the mills. Of the forty per cent two-thirds would be sold immediately, ten per cent of the balance would be sold during the free storage period and the remainder would be waiting in the private terminals or mills for instructions from the farmer to sell. In that event the commission house would obtain from the private elevator a warehouse receipt for the grain if the elevator were a regular private elevator and from other private houses an official outturn and the weight certificate.

Before the cars were ordered to be diverted to the private elevators or mills the commission house would arrange for a premium to be paid over the cash price on grain prevailing on the day that the farmer ordered his car to be sold. This is the nature of the bargain and this premium is the incentive for diversion. These premiums range from $\frac{1}{4}$ of a cent to one cent per bushel. When the commission merchant makes settlement with his customer, the farmer or consignor gets any premium that has been obtained in the sale. It is not possible to state fully the total amount paid as premiums over and above the ruling cash price for any period. As to premiums for the year beginning the 1st September, 1923, 15 private elevators reported that they paid a total of \$408,705.39. Three mills paid a total of \$51,000. Two private elevators kept no records. There are no complete figures as to the quantity of grain upon which these premiums were paid. Twelve private elevators report premiums paid on a total of 53,314,892 bushels. Five kept no records.

Profits made by Private Elevators.

A statement prepared by Marwick, Mitchell & Co., Chartered Accountants, was filed, which shows the net profits per bushel realised by the private elevators for the two seasons 1921-22 and 1922-23. These figures are for fourteen elevators operated by twelve companies. The companies investigated do not include the private elevators operated by or on behalf of the two farmer companies. The net income taken was adopted from the creditors' annual reports and excludes dividends on investments and any capital profits or losses. Income tax has also been provided. The profits shown include all profits of the terminal elevators whether made from trading (both cash and future), cleansing, mixing, storage, elevation, etc. The bushels handled is based on figures supplied by the elevator companies.

Summary of earnings of twelve companies owning or operating 14 houses and reporting for an aggregate of 26 fiscal periods; thus two periods for 12 houses and one period for each of the remaining two:—

	1921-22	1922-23	Total
Net profits..	\$ 1,174,067	\$ 957.07	\$ 2,149,874
Bushels handled..	93,393,000	114,231,000	207,624,000
Rate per bushel..	1.256c.	.854c.	1.035c.

These figures may be compared with those compiled on the country elevator companies where the net earnings for the year 1920-21, 1921-22, 1922-23 averaged four-fifths of a cent per bushel. The average net earnings, it will be observed, are considerably higher for the private elevators. Returns are not available to show the average net earnings of the public terminals for the same period.

Complaints of the Eastern Millers.

We have sympathy with the difficulties of the smaller flour mills of Eastern Canada. It is clear that these mills perform a useful local function in the

agricultural economy of the country. The difficulties which they find, however, in competing with the larger mills in general are due to the advantages of large scale production which these larger mills enjoy. Many of these advantages would exist even if the mixing houses were not allowed to ship grain on straight grade certificates. They claim, however, that they are under an appreciable disadvantage in so far as the grain coming from the mixing elevator carries a larger moisture content than the average of the contract grades in the public terminals.

Difficulties in the Administration of Inspection.

In all instances where the values of goods are determined by official inspection the danger is always latent of fraud creeping in. The best preventive against such an occurrence is in the character of the men selected to do this important work. In our investigation into the handling of grain we have formed a high opinion of the integrity and capacity of the inspection staff. We wish to point out also that advantage would accrue to the public terminal elevators where grain is inspected out at a higher grade than that to which it rightly belongs, by the creation of overages; provided, of course, that these overages are retained by the elevator.

Evidence given by deputy inspectors shows that frequently they were on duty during the rush of fall shipments for very long hours, on one instance as long as forty-eight hours. Where men are on the stretch for unduly long periods there is always the danger that the quality of their work will not be up to the standard. Evidence was also given that deputy inspectors were often attached for duty to the same terminal elevator for three or four years.

Mixing at Country Elevator Points.

Mixing in country elevators stands in a somewhat different position to mixing in the private elevators. The grain has had no legal grade placed upon it; consequently whatever mixing may occur is mixing *before* grading, while that of the private elevators is mixing *after* grading. The area from which the country elevator draws its supplies is limited and in many parts of the country usually provides grain of nearly the same quality. The construction of country elevators unfits them for mixing and as a rule they are not equipped with sufficient machinery to put grain into condition to do so. The country agent has not sufficient information or skill to help him decide how to mix the grain so that it will get just under the inspections for the higher grade. The country agents are not encouraged to mix by the head offices. On the whole, as a matter of business practice the tendency is all against encouraging the country elevator agent to mix grades. At one local point in Manitoba, however, mixing appeared to be carried on in the same general manner as it is at the private terminal elevators. The witness stated he had six country elevators, three being located at one station. He bought all his grain and this grain was unloaded at the central point into two of these elevators and cleaning and re-cleaning was concentrated in the Wind house. The grain was mixed before being sent forward. This is an isolated instance.

ATTITUDE OF THE GRAIN TRADE

We do not accept the view that the men engaged in the grain trade are indifferent either to the quality or to the reputation of Canadian grain. There are always exceptions in every trade, but we are convinced that the majority of men handling Canadian grain are interested in putting out a good grade, one that will reflect credit on their house. While the general operations of the Lake Shippers' Clearance Association means that an exporter may obtain his grain from anyone of the lake front houses, it is always open to the exporter to bring pressure to bear on the seller not to receive grain from a certain house. This

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pressure has been exerted at various times. It is therefore very much to the interest of the private elevators that the grade of grain they ship should not be below the average shipped elsewhere. It is also worth noting that if a deterioration of Canadian grades began to take place, while the effect of this condition ultimately would be to injure the Canadian producer by lowering the price received for his grain, the incidence in the first place would be upon the Canadian exporter. He would be the first to suffer. He would be in difficulties with his English customers over the quality of the cargoes they were receiving. On the other hand, if the cargoes are of excellent quality it is that much easier for him to sell Canadian grain in competition with grain from other parts of the world. Undoubtedly, of course, if a continued period of deterioration in quality were to occur the result would go beyond the making of complaints to the Canadian exporter and would register itself in the lower bids for Canadian grain. The English importer bases his offers on the quality of Canadian grain that he is receiving at Liverpool.

Mr. James Stewart stated that when the Wheat Board was in existence he found it advisable, in order to enable him to dispose of the lower qualities of the wheat, to encourage mixing houses to blend these lower grades and try to give them a larger quantity of the higher grade. That was in 1920. He stated that with the Wheat Exporting Company and with the Wheat Board, from 1917 to 1920 inclusive, when he was in charge of exporting, he had an inspector of his own at the lake front to check shipments from the mixing houses. He had an arrangement with the mixing houses that they would receive the same price for their shipments if the quality was as good as that coming out of the public terminals. On the other hand he had a four cents a bushel latitude if they did not give, in the opinion of his inspector, a quality that was as good or better than that coming out of the public terminals. Mr. Stewart said he did not recollect one occasion when he had to put that penalty into force, to within one-quarter of a cent.

Mr. Stewart said that originally he was not in favour of mixing because he had the idea that it was not the right thing to do. Later he changed his opinion because the competition set up by the mixing houses was such that he satisfied himself that the farmer got more for his produce under this system than if he only had the public terminals.

Mr. James A. Richardson, president and general manager of the James Richardson & Sons, Ltd., said they had been in business for many years, and had extended their business until either in their own name or through affiliated connections they had the handling of grain in the different branches from the country elevators clear through to the exporter. They had made the first shipment of Western Canadian wheat which was made from this continent. For the crop year ending 31st August, 1923, they had shipped from Fort William a little less than 67,000,000 bushels. Mr. Richardson said that in 1917 they commenced work on a large elevator at Port Arthur primarily with the idea of going into the private elevator business. They had in mind particularly at that time the possibility of free wheat entering the United States. He said "we believed that if we were not in a position to operate as a private elevator we might find ourselves in the position of being able to ship our grain to private elevators at Duluth and buy it back from them f.o.b. our boats, to better advantage than we could by handling it through our own plant; that is, we were afraid that we would not be able to compete with private elevators operating in Duluth." He stated that they had operated for one season as a public house and then had become private, because they believed they could handle their grain more economically and more efficiently and get better results by operating as private. They had a certain amount of their own grain coming from the country in the lower or off-grades and they were not able to utilize the flow to the best advantage. They did not want to lose the handling of their own grain

by sending it to private elevators who might be in a position to outbid them.

Mr. Richardson said that the desire to survive in the grain business compelled them to endeavour to cut out as far as possible every intermediate service that it was economical for them to eliminate. He believed that the private elevators covered a field that the public elevators did not cover, and that in covering this field they benefited the producer. Ten or twelve years ago he was not in favour of private elevators as he did not see where there was any pressing need for them. Our grain was nearly all high grade and nearly all clean. As we produced grain longer our crop tended to get dirtier, and as the area widened there was nearly always some section of the country which suffered from rust, heat, frost, rain or snow or some of the other enemies of the wheat plant. The restrictions on the operations of the public elevators debarred them from putting a lot of the off-grade grain into the best marketable shape, so that it could be sold most advantageously. The result was that small elevators were built to take care of this grain. This was not a good national development. These small elevators could not handle this grain to nearly as good advantage as the larger elevators. The difficulty of inspection was increased; additional work was imposed on the railways; and there was more lower grain than they were able to buy and handle. They did not provide the competition necessary to give appreciably a better price to the producer. Now that some of the large terminal elevators had become private they had the effect, he said, of preventing the lower grades going to an undue discount, particularly in off-grade years.

ATTITUDE OF FARMERS' ASSOCIATIONS

A large part of the grain trade is in the hands of the farmers themselves. For many years, we have had the Saskatchewan Co-operative Elevator Company and the United Grain Growers Limited. More recently, we have the Wheat Pools formed in the provinces of Alberta, Saskatchewan and Manitoba. Those who participate in these large enterprises must, of necessity, be watchful of the interest of the producer in all their activities. We find that they are now all engaged in the mixing business. This fact alone must be weighed very carefully when consideration is given to the demand that this business be abolished or be restricted in a material manner, as, for instance, by limiting it to mixing in the low grades, or by ear-marking the product of the private elevator so as to preserve its identity separate on the market from that of the public terminal. The fact that these organizations have entered the mixing business themselves, and have not asked that it be discontinued or hampered, must indicate that in their opinion this business is not a hopelessly evil one, and that it does possess commercial advantages which can be passed on to the producer.

Hon. J. A. Maharg, then president of the Saskatchewan Grain Growers Association, and a director of the Saskatchewan Co-operative, of which company he is now president, said that the directorate of his company, with perhaps one or two exceptions, were individually opposed to the practice of mixing, but, because the practice had become prevalent, the company found that they had to go into it to make money to compete with their competitors, and they were forced into it. His personal view was that mixing was done by the farmer on the farm, it was done in the country elevator, it was done by all who handled wheat, and he believed Canadian wheat to be mixed in the United States; and, therefore, since it could not be stopped, mixing in the private elevators at the head of the lakes should not be stopped.

Mr. J. B. Musselman, managing director of the Saskatchewan Co-operative, said that the company has been engaged in mixing since 1917. Lately, the company has spent a large sum of money in doubling the capacity of its

private elevator. This step was taken, he said, after the directors had given full consideration to the question of mixing, and had placed themselves on record by resolution, as concluding from the experience of the company, that mixing can be carried on with advantage to its patrons. In his opinion, the whole question was one of proper inspection out of terminals, and at points of transhipment.

On the other hand, the Hon. Geo. Langley, then president of the Company, declared himself as being opposed to mixing in the three contract grades.

The position of the United Grain Growers Limited, as stated by counsel, was that mixing in the private terminals was beneficial provided that the standard of inspection outward was maintained.

The three wheat pools have taken in their charters the power to mix grain. For instance, the charter of the Saskatchewan Pool, chapter 66 of the Statutes of 1924, contains the following language in section 4, which sets out the powers of the Association:—

“To carry on the business of.....cleaning, treating, conditioning, mingling, mixing, grading, blending, processing,.....marketing and exporting grain.....”

Lately these three pools have co-operated in established a central selling organization, which has leased to private elevators at the head of the lakes, and is now operating them as mixing houses.

RECOMMENDATION

The conclusions that we come to after studying very carefully all the evidence presented on this vexing but important problem is that the position of the private terminal elevators should be legalized, but that they should be restricted to taking in only their own grain. Briefly, we believe that the best interests of the producers of Canadian grain would be served by a reversion to the position in which the private elevators were placed originally by the regulations of the Board of Grain Commissioners in 1917, before Rule 17 was amended to permit them to store grain.

In this respect, however, care should be taken to see that nothing is done which will prevent the wheat pools' selling agents from taking into their private elevators the grain forwarded by the members of the pools, or by the organizations on behalf of the members. According to the agreement entered into by each producer who joins the pool, the grain remains his own property until sold by the selling agency, and the producers are virtually doing their own mixing.

While we do not think the private terminal elevators should cease to enjoy the privilege of receiving straight grade certificates on the outward inspection of their grain, we consider it to be of equal importance that confidence in grain in the public terminal elevators should not be disturbed. We consider it should be possible for the exporter or the eastern miller to obtain his shipments from grain in the general bins of a public terminal if he so desires it. It should be equally certain that the farmer should be able, without encountering undue pressure or obstacles, to place his grain in the general bins of the public terminals if he wishes to store it there or sell it in that position.

With a view to maintaining the quality of the grain in the public terminals, they should not be allowed to accept for storage in their general bins grain coming from elevators licensed as private mixing houses. The identity of grain shipped from a private mixing house into a public elevator should be kept separate, and arrangements for such shipments should be made by special binning, as provided by section 229 of the Canada Grain Act, 1912.

In general we found that an inappreciable amount of mixing before official grading occurred at country points west of Winnipeg. In one instance, in Manitoba, under a country elevator license we found grain being concentrated and being cleaned and mixed before it was sent on to Winnipeg for inspection. Where such a practice exists, we recommend that the Board of Grain Commissioners should require such elevators to be licensed as private elevators.

Requiring the private elevators to receive only their own grain should eliminate the practice of diversion as it exists at present. Any disadvantages that may exist in the functioning of a sample market are incurred under diversion without the full advantages to the farmer being attained. Where country elevator companies ship selected cars of farmers' grain directly to their own private houses, without giving a premium for this diversion, no direct advantages accrue to the farmers. There is some advantage where the private elevator is forced to pay a premium to procure diversion. The same advantage and possibly greater could accrue to all farmers whose cars are diverted if the private elevator that desires to accumulate grain must go into the market and offer such prices as would induce the farmers to part with their grain at the time that the private elevator needed it.

We do not go so far as to recommend that any further provision for setting up a sample market should be made in the Act at present, but we think that if the privilege of diversion were eliminated, the effect would likely be to establish a sample market just as soon as the demand for cash grain at Winnipeg or Fort William would make the occasion ripe for it. We would leave the present provisions in the Act for a sample market available for use when needed. We point out, however, in respect to subsection 3 of Section 57 of the Act, that the exemption of subsection 3 of Section 208, as to carload shipments of grain, from being applied to sample markets ("twenty-four hours free time after such advice of arrival should be allowed the advisee in which to dispose of his property") would greatly hamper the proper functioning of such a market.

With regard to the inspection of grain out of the private terminals, we recommended that a sample should be supplied to the deputy inspector attached to these houses to be followed by him in all cases, which should actually be the average of the grain, at the initial inspection point, properly cleaned. All grain should be required to come up to this standard in order to secure the grade desired.

It should also be made clear in the Act that an exporter shall have the right to appeal against the grading of an inspector when he is not satisfied that the grain in question meets the aforesaid requirements.

We recommend also that deputy inspectors should, from time to time, be changed from house to house in carrying out their duties. We do not think deputy inspectors should be attached to any individual elevator for long periods of duty. We believe this change would lead to a greater uniformity in the various grades shipped by broadening the experience of the inspectors. We recommend that sufficient inspectors should be engaged to make it unnecessary to keep the same man on duty for long hours of overtime. The importance of the service, apart from other reasons that might well be urged, warrants this precaution. We repeat that we regard most highly the character of the men employed in the grain inspection department. We believe that the wages paid and the general conditions of service should be such as to procure and hold men of suitable education and proved character in this branch of the work. In the long run this is true economy and the surest safeguard against laxity or fraud.

MIXING IN THE UNITED STATES

Very wide publicity has been given to reports that Canadian grain, especially Canadian wheat, passing in bond through the United States to tide water, was being tampered with and was being mixed with American soft wheat. This information came from Great Britain where it was complained that wheat through certain American ports was being delivered on Canadian Certificate Final which in fact, proved to be a mixture of Canadian and American soft wheat. At an early stage it became evident to us that these reports had caused great alarm to the Canadian producer of hard spring wheat. At numerous points the matter was brought to our attention.

While it was not possible to make a thoroughly exhaustive investigation into conditions at all American North Atlantic seaports we visited Buffalo and New York and examined there the precautions taken to preserve Canadian wheat from contamination while passing through the United States. We have also had the benefit of reports made by the United States Customs Department after investigation into the complaints emanating from Britain. The Board of Grain Commissioners has furnished us with a copy of the report of Chief Commissioner Boyd, and Chief Inspector Serls who went to England a year ago precisely to investigate this complaint. Mr. Commissioner Rutherford who visited the Old Country last summer on our behalf also looked into the matter.

It would appear that certain shipments of Canadian wheat mixed with American soft wheat delivered to apply on straight Canadian certificates have been received in England. The number of instances has not been large. The publicity which these shipments have received in trade circles and the alarm that they have created in Great Britain are significant of the extreme sensitiveness of the British market to any tampering with the quality of grain supplied on Canadian Certificate Final. In tracing statements about illicit mixing of Canadian wheat in the United States made to us at many points we found invariably that they related to the cases investigated by Messrs. Boyd and Serls and covered in their report submitted on November 24, 1923. Mr. Commissioner Rutherford, however, reports another and more recent instance, that of the steamship "Trevidor" from Philadelphia, of the arrival in the Old Country of a cargo of grain under Canadian Certificate Final showing strong evidence of admixture.

No complaints are made touching grain shipped through Canadian channels of trade and out of Canadian ports, nor have any complaints been fastened upon shipments from the Port of New York. The cargoes complained about were shipped from Baltimore and Philadelphia though it does not necessarily follow that tampering with the cargoes took place at these points. It might have occurred earlier at the port of entry into the United States.

The duty of supervising the shipment of grain in bond through the United States devolves upon the United States Customs Department. The Customs Department's interest lies in preventing any gap occurring that would allow Canadian grain to be smuggled into the United States free of duty. Mr. Harry W. Smith, deputy collector of Customs at Buffalo stated after complaints had been made, four investigations were made in the United States. Two by the Customs Department, one by the State Department and one by the Federal Trade Commission. The conclusions of these four investigations were almost identical but the Federal Trade Commission did make certain recommendations that they thought would make the supervision absolutely tight. These recommendations covered closer supervision of grain at Philadelphia and certain other minor recommendations. On the whole we find that the regulations appear to be as careful as can be designed and the administration of them alert and strict.

In view of what we have stated above about the sensitiveness of the British Grain Trade to anything affecting grain delivered to them on Canadian Certificate Final we deem it of great importance that any instance of tampering with Canadian grain coming to the notice of our trade commissioners in Great Britain should be at once reported to the Board of Grain Commissioners and that they should take immediate steps to probe the complaint and endeavour to fix responsibility for the occurrence.

It may be pointed out further that apart from legal or administrative action cases of tampering when they occur bring with them a commercial penalty. In the cases that have occurred the shipments were from Baltimore and Philadelphia. As a result these ports are under a cloud so far as shipments out of them of Canadian grain is concerned.

FINANCING THE GRAIN MOVEMENT

Preparation.

The widespread organization of Canadian banking institutions simplifies the task of assembling sufficient reserves of funds in Western Canada to finance the moving of the grain crop. Apart from thousands of small loans made to farmers on the security of their threshed grain the banks gather together approximately \$150,000,000 each year. This loanable fund has to be secured largely in the east before the crop begins to move. It is not carried as current loanable funds in Western Canada. Such a large volume of purchasing power is drawn from several sources. The banks probably have a certain amount of idle funds on deposit with agents in other countries which they can draw in. They also probably have a certain amount of money on call in New York which they will withdraw for the handling of the crop. Then there are certain loans which are repaid as the money for the handling of the crop goes into circulation. These are farmers' advances, loans made to country storekeepers, and so on.

In addition to these resources there is the bank's own circulation which assists to a considerable extent. Not only is there the regular circulation but between September and February inclusive by special provision 15 per cent of the paid up capital and reserves can be issued in the form of circulation by paying the government five per cent interest upon it. This, also is available.

In accumulating their funds, the various banks act separately. They merely form an estimate of the requirements of their own customers. The total gathered together does not represent a collective estimate of the amount required followed by an agreement by the individual institutions to provide certain amounts.

The banks supply all their branches throughout Western Canada with very substantial quantities of the bank's own notes. Since these notes are the bank's own obligations they do not go into circulation officially until actually paid over the counter.

Loaning Powers of the Banks.

The provisions of the Bank Act under which the banks loan money on grain are found in sections 86, 87, 88, 88a and 89. The form of security taken under section 88 is set forth in Schedule C. of the Bank Act.

Loans Made on Threshed Grain Held by Farmers.

Some farmers after they have threshed their grain desire to hold it for a period before selling. In order to do so they borrow from the bank. On loans made on such security the banks charge interest at rates varying from 7 per cent to 8 per cent. On loans made on threshed grain it is claimed that there is no pressure imposed by the banks upon the farmers to sell their grain and retire their loan. "If the customer wants to sell his grain in July instead of May, the banks will carry him over to July just as well as in May."

Sometimes the banks require that the farmer shall insure his grain when he holds it in granaries. Sometimes the granaries are isolated and there seems to be no risk and it is not insured. The forms used by the bank give it the right to insure if the customer refuses to insure on the bank's request. When the grain is in storage in an elevator the storage charges cover insurance. The total sum that is loaned in this way is made up of thousands of small loans. It is almost impossible to form an estimate of the total.

Loans Made to Country Elevator Companies.

At the beginning of the season the representative of each company goes to the bank with which it deals and negotiates a credit. In a few instances individual large companies deal with even two or three banks. The credits range from \$50,000 to approximately \$3,000,000. Mr. H. T. Jaffray, chairman of the western subsection of the Canadian Bankers' Association, who was examined on this subject, would not say that there were not cases where an individual company had obtained as much as \$3,000,000 from one bank. Where an account is divided, however, it is usually divided on an equal basis. This is simply a mutual arrangement between the banks and the customer.

The initial steps are taken by the general manager of the country elevator company bringing to the bank a statement showing the financial standing of his company. In the ordinary instance an average substantial company will have on hand at the beginning of the season quite a sum of money to begin the season's work. The amount varies, rising with certain companies to an amount higher than two or three hundred thousand dollars. To save on interest charges companies will use up first the funds they have accumulated out of their own resources. Not infrequently a company will invest part of its capital in bonds for the season that grain is not moving. Then it will sell these bonds in the autumn and in this way recover an amount of ready funds for initial operations.

At the time the credit is arranged the banks do not take any form of security from the customer. Security is taken when the customer begins actually to borrow. It is only when the company has exhausted its own funds that it has recourse to its credit. Country elevator companies thus have on hand usually a quantity of grain which they have either bought outright from the farmers or upon which they have made advances to the farmers when they turn to the banks. This grain can be pledged as security. The forms used in this transaction are based on the Bank Act and are as follows:—

Form 107 "A"

Form 107 "C"

Form 107 "D"¹

The application form (107A) is usually taken once or twice during the season. The security form (107C) with the promissory note (107D) is taken with every individual advance. The elevator company thus executes a general pledge when it obtains its first loan, which is repeated several times during the season, and executes a separate pledge for each individual advance. In addition it signs a promissory note for each particular sum of money. It will be noted that these forms are used for loans upon grain that is owned by and in the possession of the elevator company. The parcels of grain are described and the place of storage specified or if in transit, identified. These forms are therefore, not intended to be used for grain which the elevator company receives for storage or forwarding.

The accuracy of the statements furnished to the bank is checked up throughout the season by the bank obtaining from the company at frequent intervals a statement of all the grain owned by it that it has in its elevators,

¹ The forms exhibited are those used by the Imperial Bank of Canada. There are minor differences between the forms used by the various banks.

or in transit to or from its elevators, the amount of advances it has made upon farmers' grain, and so on. Such a statement is obtained not less often than every two weeks, sometimes more frequently. An examination of this statement reveals to the bank the elevator company's liquid position as contrasted with its borrowings. It gives the bank a check on the position of its loans.

A further precaution taken is that the bank insists upon the elevator company selling grain against the grain purchased. This is to avoid any possibility of the market price so dropping as to affect the bank's security. Banking practice almost invariably requires that the elevator company should hedge its purchases except in the instance where a customer desires a relatively small loan against a large amount of grain. "If a customer is only going to keep a ten per cent margin the banks would naturally insist that the grain must be hedged, must be protected against fluctuations. On the other hand, if a customer wanted to borrow \$100,000 against a million bushels of grain, the banks would not care whether he hedged or whether he did not hedge. But there are very few customers who need only to borrow a hundred thousand dollars against a million bushels of grain. The ordinary practice is to maintain about a ten per cent margin."

Country elevator companies thus borrow usually up to ninety per cent of the value of the grain they have bought, plus the amount of advances made upon grain to farmers. This wide use of credit is due to the large volume of grain the country elevator companies handle during the crop moving season. The requirement to hedge is a definite term of the elevator company securing its credit. Interest is charged only upon the loans as made. The banks having accumulated the funds for moving the crop are ready to make extensive loans in this manner. If the loans are not made the banks suffer, since they must hold the funds available in the event of the line of credit for which arrangements have been made being fully taken up.

It sometimes happens that country elevator companies borrow money on grain they have in store at the head of the lakes. Mr. Jaffray would not say it was a common practice, but admitted it was not an unknown practice. The loans are made on the security of the warehouse receipts under Section 86 of the Bank Act. Similarly, loans are made on the security of the bills of lading. Under Section 86 of the Bank Act, the warehouse receipt or bill of lading represents the goods. If a company owned grain which it had stored in a terminal elevator, in submitting statements to the bank showing its position, it would include a classification there under the heading, "Grain in Store in Terminal Elevators." In acting for farmers an elevator company might have in hand bills of lading or warehouse receipts for grain that did not belong to it. If it delivered such documents to the bank in order to obtain a loan it would be financing upon the farmers' grain. Moreover, since these documents represent the goods and vest title in them, it could occur that the bank would acquire property in the goods, as a security for its loan, against the farmer who was the real owner. In the event of the elevator company failing the bank would be protected, and, if there were no other assets to realize upon, the farmer would stand the loss.

Another situation where a farmer's interest might suffer occurs where a country elevator company has its own grain and farmers' grain stored in common storage bins. If the bank had made a loan on the security of 100,000 bushels of grain stored in the country elevator and the company failed and it developed that there were only 100,000 bushels of grain in the elevator where formerly there had been 100,000 bushels of farmers' grain and 100,000 bushels of company's grain, the security of the bank would protect it on claiming on the residue. It was stated that a case of this kind was unknown. The banks rely upon the honesty of the elevator company. They accept the signed statements of the elevator companies as to what grain they hold. The banks do

not make any independent inquiry. In granting a line of credit, in the first place, of course, the banks satisfy themselves as to the integrity of the customer. They have before them also, the audited statement of the company prepared by the elevator company's own auditor. Some companies have their books audited every 3 or 6 months, but the usual custom is to have an audit once a year.

The credit extended to the country elevator company becomes fluid again as soon as the company sells the grain to the exporter. The banks lend money to the exporter to finance purchases from the country elevator company. The exporter pays the elevator company. This is credited by the bank to the latter whose credit becomes liquid again to that extent. The peak of the movement, it is estimated, represents loans amounting to as much as \$125,000,000.

Financing the Commission Merchant.

Compared with the country elevator companies, the commission merchant borrows in a small way. Commission merchants commonly make advances to farmers on the security of grain placed in their hands to sell. These advances are made on the security of bills of lading. In order to deliver the grain when sold the bill of lading is made out to the commission merchant. When he desires credit a commission merchant will bring to the bank his securities and he will say, "here are bills of lading upon which I have advanced \$30,000, I want \$30,000." The bank takes over the bills of lading as collateral. It does not take a written statement from the commission merchant but relies for its protection upon the documents which, under section 86 of the bank act, represents the goods. The bank thus acquires a right in the goods for the time being and in the event of the commission merchant becoming bankrupt, would be protected against the real owner of the grain. The possibility of loss to the farmer thus exists when the bill of lading for his grain passes over into the hands of the commission merchant. The Grain Act requires commission merchants to execute a bond, but if the bankruptcy is a big one, the bond may not be sufficient to cover losses.

Against the likelihood of farmers suffering losses in this manner there is the fact that bankers will not extend credit freely simply because such excellent collateral as bills of lading are offered. They must have a belief in the integrity of the commission merchant. All banks desire to know the standing and type of men they are dealing with before entering into business relations with them. In practice a bank will not deal with a man at all until it has investigated his antecedents, obtained a statement of his affairs and formed the conclusion that his account would be a desirable one. If satisfied that the customer were an honest commission merchant the bank would then simply advance money to him on the security of the bills of lading presented. Under normal conditions when the grain is sold the purchaser pays the commission merchant who takes up his loan. This releases the collateral, which is delivered to the purchaser.

Financing Private Terminal Elevator Companies.

At the outset it must be kept clear that private terminal elevator companies are divided into two groups: (1) a private terminal elevator company which handles its own grain; (2) a private terminal elevator company which handles both its own grain and accepts grain for storage. This latter is known in the trade as a "regular" private terminal elevator company. A "regular" private elevator also may issue a form of warehouse receipt though the grain that these receipts are issued upon may in fact be its own property or may be grain stored with it.

Private terminal elevators, not "regular," borrow under Section 88, executing the pledge used in connection with loans made thereunder. As a rule "regular" private terminal elevators follow the same practice. The forms taken are identical with those required from the country elevator companies. Some-

times the "regular" private elevator borrows on a warehouse receipt. In that instance another form is used. This form is taken under Section 86 of the Bank Act.

(Form 107B)

In addition, annexed to form 107B is a letter which goes with the warehouse receipts or bills of lading which specifies on the back the grain in question, car or warehouse receipt No., railway or warehouse, and describes the parcel of grain. This form is used by the bank whenever an advance is made either to a "regular" private terminal elevator or to a country elevator company when it borrows on warehouse receipts.

The bank sends the documents to the Lake Shippers Clearing Association, which acts as the bank's agents. When the grain is sold and goes forward the exporter pays for the grain, the bank obtains the money on behalf of the delivering company and its agent the Lake Shippers' Clearing Association releases the documents. Thus the credit forms and conditions under which private terminal elevator companies finance their grain movement is virtually the same as the conditions under which the country elevator companies finance their business. Where loans are made on the basis of warehouse receipts to "regular" private terminals the same possibility exists that the company may turn over to the bank warehouse receipts for grain in their possession which actually belongs to the farmers. Here, too, in the case of bankruptcy the bank would be protected and the farmer owning the grain might stand the loss. The "regular" private terminal elevator companies are required to be bonded by the Winnipeg Grain Exchange which registers their warehouse receipts as to the quality of their grain, the weight being certified by the official weighmaster.

Financing the Exporter

The exporter borrows to pay the country elevator company or the private terminal company. Ordinarily he borrows on the security of the warehouse receipts as contracted with the above companies which usually pledge their grain for a credit under section 88 of the Bank Act. The warehouse receipts the exporter deposits with the bank are those representing the parcel or cargo of grain that he is shipping out. Indeed when accumulating a cargo the exporter starts borrowing as he buys the grain against the warehouse receipts. His own capital will enable him to make his initial purchases. These warehouse receipts are lodged with the Lake Shippers' Clearing Association who give a certificate to the Bank that they hold that much grain on behalf of the bank. The bank will lend up to 90 per cent of the value of the grain. The warehouse receipts being in the hands of the Lake Shippers' a cargo is billed out with the shipping bill made in the name of the bank.

In four or five days the exporter will draw on his purchaser with the shipping bills attached and the bank will send the draft forward. The shipping bill will be surrendered on the payment of the draft. These drafts are paid very promptly. In ordinary transactions of this kind there is a draft drawn on somebody in Buffalo, New York or Montreal. The payment of this draft closes out the transaction as far as financing the movement of the Western grain crop concerns the western branches of the Canadian banks.

Ordinarily, however, the banks keep control of the grain until it gets to Liverpool for they are still furnishing the credit facilities which move it forward, and in practice they do not surrender possession until they are paid. Seaboard transactions are a separate stage in the movement. Export paper is handled at the Atlantic ports by the banks at Montreal or New York. It is also handled in large quantities from Vancouver in connection with shipments by the western route. If the business goes through Montreal or Vancouver the

Canadian banks will thus carry the trade from the producer in the West to the ultimate market in Liverpool. If the grain be shipped via New York or other American ports on the Atlantic seaboard the American exporters will deal with their own banks. They will pay for the grain shipped to them by Canadian exporters out of Winnipeg on the delivery of the lake shipping bills. They then sell their sterling exchange to the New York banks. At the seaboard the custom is for the banks to buy sterling outright; the exporter sells his exchange to the bank. The grain crosses the ocean either in the name of the bank, or at other times the grain is shipped to the order of the shipper and endorsed by the latter over to the bank.

The credit used by the exporter becomes liquid at the seaboard when the agent of the British or foreign importer makes his arrangements with the bank to take up the documents sent forward from the west. The credit services of the bank in marketing the western grain crop end when the bank presents its draft with the documents attached to the importer in Liverpool and is paid.

Conclusion

A weakness that this system of financing discloses is the possibility that when farmers turn over their bills of lading or warehouse receipts to grain companies, the latter may pledge them with the bank to meet the exigencies of their own financing. While such a proceeding is not contemplated by the banks in the terms of the credit they extend to the grain companies, in the actual rush of business they are not in a position to investigate the statements furnished by their customers. They must largely take their word. If a firm has borrowed largely and pledged farmers' paper and then becomes bankrupt the bank is protected by its pledges and documents under the bank act but the farmer is likely to suffer loss. This is true even though certain provisions of the Grain Act provide for bonding grain companies doing a certain class of business. Farmers have lost heavily on several occasions under circumstances of this nature.

To mend this defect it has been suggested that when farmers' grain is billed out by a country elevator agent a distinctive type of bill of lading should be employed that would indicate that the ownership of the grain in question did not lie with the elevator company or grain merchant. A similar precaution would be taken with warehouse receipts following such bills of lading. Undoubtedly such a requirement would make it impossible for grain companies to finance loans on farmers' grain. There are, however, serious objections to such a requirement. It would make it very difficult for grain merchants to give an advance to farmers when the latter deliver their grain since the banks would not accept for purpose of credit bills of lading or warehouse receipts about which there were any doubt. The use of special documents would also mean that the farmers' grain could not be sold quickly and conveniently on the market. It would hamper delivery of the goods. At present the transfer of documents transfers the ownership quickly and expeditiously, but if the bill of lading or warehouse receipt had to be mailed back to the country point where the owner of the grain resides for endorsement over to the purchaser, disastrous delays would occur and business would not be done. If the farmer, to avoid such delays endorsed the document over to his agent *previous* to the sale of the goods the situation in effect would be the same as at present and nothing would be gained but a further complication to the trade.

The most feasible method of safeguarding the interests of the farmer in this respect is by making more comprehensive and stringent the regulation which covers the bonding of companies, so that in the event of failure the bond will provide a cover for losses.

FORM No. 107 "A"

APPLICATION FOR ADVANCES AGREEMENT TO FURNISH
SECURITY, AND DEFINITION OF POWERS OF BANK
WITH REFERENCE THERETO.

To THE IMPERIAL BANK OF CANADA

The undersigned is a Wholesale (a) of or in (b)

(c) and is also a Wholesale Manufacturer of the products of such goods; Imperial Bank of Canada (herein called the "Bank") is hereby requested by the undersigned to make advances to the undersigned (herein called the "Customer"), from time to time, and in consideration thereof, the Customer doth hereby promise, consent and agree as follows:—

1. That the Customer will, from time to time, give to the Bank for every such advance and interest security by way of Warehouse Receipts, Bills of Lading, or securities under Sections 86, 87, 88 and 90 of the Bank Act, (or any sections of any Act or Acts which may be hereafter passed relating to the same subject matter whether by way of amendment, substitution, revision or consolidation of the existing Bank Act or otherwise), covering all the products of agriculture, the forest, quarry and mine, and the sea, lakes and rivers, and all the live stock, and dead stock and the products thereof, and all the goods, wares and merchandise, now or hereafter belonging to the Customer, upon the security of which a Bank may lawfully make advances, including all such products, stock, goods, wares and merchandise (hereinafter called the "goods") now or hereafter belonging to the Customer, of the classes or descriptions following, that is to say: (d)

(a) Manufacturer, Purchaser, Shipper, Dealer.

(b) Class of goods customer manufactures, purchases or deals in, e.g., lumber, cereals, pulp-wood, grain, fish, live stock.

(c) If not a manufacturer of the products, strike out this line. N.B. All advances must be made on notes, and Current Account must be kept in credit.

(d) Here give general description of the class of goods to be covered by the security, e.g., flour or wheat or lumber; qualifying each commodity with the adjective "all."

(e) Give as particular description as possible of the place or places where the goods to be covered by the security are or are intended to be.

and all products thereof which are now stored, contained or situated, or which at any time hereafter, whilst any such advances shall remain unpaid, may be stored, contained or situated in the following place or places, that is to say: (e)

or in any other place or places or in transit thereto or therefrom.

2. If the Bank shall surrender to the Customer any Bill of Lading or Warehouse Receipt so given, for the purpose of enabling the Customer to obtain possession of any goods covered thereby from time to time, the Customer shall receive possession of the said goods as bailee for and on behalf of the Bank, and shall store the same for the Bank, and shall give to the Bank proper Warehouse Receipts or securities under Section 88 of the Bank Act, or any section substituted therefor, covering said goods.

3. That the Customer will keep all goods covered by the Warehouse Receipts, Bills of Lading and/or other securities from time to time, and the products thereof, insured against fire to the extent of the indebtedness secured thereby, or to the full insurable value thereof in case such indebtedness shall exceed such insurable value, and will assign the policies to the Bank, or have the loss (if any) made payable to the Bank and the policies forthwith delivered to the Bank. Should the Customer neglect to keep up such insurance, the Bank shall be entitled, but not bound, to effect insurance thereon to such an extent as it sees fit, and add the premiums paid and interest thereon at 7 per cent per annum, calculated according to the Bank's usual custom, to the amount secured by said Warehouse Receipts, Bills of Lading and/or securities, which premiums and interest the Customer agrees to pay on demand.

4. The Bank may from time to time, and either before or after default shall have been made in repaying the said advances or any of them, sell all or any of the goods upon which it may be entitled to security, as well as all or any

goods covered by such Warehouse Receipts, Bills of Lading and securities aforesaid, and such sale may be by public auction or private sale, and either en bloc or in smaller quantities, at the Bank's discretion, or partly in one mode or partly in the other, and no advertisement or public notice of sale or notice to the pledgor of the time or place of sale need be given, (the same being hereby waived), and every such sale is hereby consented to by the Customer, and shall confer upon the purchaser the absolute title to the goods so sold. Before exercising the foregoing powers the Bank agrees to give the Customer 24 hours notice of general intention to sell by posting a registered letter addressed to the Customer at the address subjoined hereto, but the want of such notice shall not affect the validity of any sale, and if such notice is once given it shall stand good for any sales whenever made.

In the event of any surplus remaining of the proceeds of the goods, after payment of the said advances, interest, premiums and charges, the Bank shall be entitled to apply such surplus in payment or reduction of any other indebtedness or liability, direct or indirect, of the Customer to the Bank, and such surplus is hereby assigned to the Bank for such purpose.

The word "charges" shall include all expenses incurred by the Bank in recovering or enforcing payment of the said advances, or realizing upon any securities therefor, including expenses of taking possession, protecting and realizing upon the goods, or upon insurance policies thereon, all of which, with interest at the rate, and calculated aforesaid, the Customer agrees to pay.

5. The products of all goods covered hereby, or by any security so given to the Bank, and the proceeds of all sales of the same or the products thereof, and all debts arising from such sales, including all negotiable and non-negotiable instruments which the Customer may receive or be entitled to receive in respect thereof, shall be the property of the Bank, and are hereby assigned to the Bank, as additional continuing collateral security for all said advances, interest, premiums and charges, and all other present and future indebtedness and liability of the Customer to the Bank, and the Bank may endorse any such instrument on behalf or and in name of the Customer. Execution by the Customer and acceptance by the Bank of an assignment of book debts shall be deemed to be a furtherance of this declaration and assignment and not an acknowledgment by the Bank of any right or title on the part of the Customer to such book debts.

6. If with the consent of the Bank, any of the goods or the products thereof are removed, other goods, of substantially the same character and of at least the same value as those so removed, shall be thereupon forthwith substituted therefor, and the Customer hereby agrees, so often as every such removal and substitution shall take place, to give and shall give Warehouse Receipts, Bills of Lading or securities under the Bank Act covering such substituted goods, all of which shall be subject to the provisions hereof.

7. The Customer doth hereby appoint the Bank the Attorney of the Customer, to execute from time to time for and in the name of the Customer, any of the securities above mentioned and any promissory note or notes representing any advance, and any lease, assignment, instrument or document expedient for the purpose of carrying into effect any of the provisions hereof, and this appointment shall be irrevocable so long as any part of the advances remains unpaid, and every power by this agreement conferred upon the Bank may be exercised on the part of the Bank by the General Manager, or Assistant General Manager or any Inspector thereof, as well as by the Manager, or Acting Manager for the time being of any Branch of the Bank where the Customer may keep an account.

8. The Bank and its assigns may at any time and from time to time enter into possession of all premises wherein the goods or any of them covered hereby or by any security so given to the Bank may be (not being the premises of a warehouseman or carrier), and hold the said premises until such goods shall be fully realized upon and shall have full right of entry, ingress and egress to and from such premises from time to time, and full power to exclude the Customer and all other persons therefrom, and for the purpose of taking such possession the Bank may break open any doors, bars, gates, or other obstructions.

9. The Bank may delegate all or any of the powers hereby granted to it to any Receiver or other person appointed by it from time to time, and on every appointment by the Bank of any Receiver or other person he shall, free of charge, have full power to occupy and use when and so often as he may desire the property and premises (real or personal), of the Customer or any part or parts thereof, and also any camp, mill, mine or factories, supplies, or other property of the Customer, for the purpose of storing or of manufacturing, or com-

pleteing the manufacture of, or of shipping or of otherwise dealing with the goods in such a manner as may in his opinion be advisable, and the right to exercise in the name of the Customer all rights, powers and privileges of the Customer of every kind, including any right to use electric, hydraulic, steam or other motive power for the purpose of carrying on any manufacturing or other operation, and such Receiver, or other person, shall also have power if he sees fit, to take a lease of or become tenant of the Customer's premises or any other premises, for all or any of the purposes aforesaid, and every such Receiver or other person shall be the Agent of the Customer, who alone shall be responsible for his acts, and the Customer shall not have any power to revoke or determine his agency.

10. The Bank may compromise, settle or adjust any claim, dispute or difference which may arise in respect of the goods or the proceeds thereof, and shall not be responsible for any neglect or delay in taking possession of, manufacturing, selling or realizing upon any goods or the products thereof, nor for any neglect or failure to exercise or enforce any of the powers or rights vested in or hereby granted to the Bank, nor for any act, default or misconduct of any agent, officer, employee or servant, and the Bank shall be accountable only for such moneys as it shall actually receive.

such moneys as it shall actually receive.

11. The Customer shall at all times duly and seasonably pay and discharge the wages, salaries and other remuneration of all persons employed by the Customer in connection with the business of the Customer, and shall from time to time as requested by the Bank obtain such waivers of prior liens for salaries, wages or other remuneration as may be necessary to secure to the Bank a first lien on the goods.

12. The benefit of all rules of law or equity, and of all statutes now or hereafter in force inconsistent with any of the provisions hereof, is hereby waived by the Customer.

13. This is to be a continuing consent and agreement, and all the provisions thereof shall extend to all advances or loans of money now presently made or hereafter to be made by the Bank to the Customer, and to all Warehouse Receipts, Bills of Lading, Securities and agreements heretofore or hereafter acquired by or given to the Bank, and to the property covered or intended to be covered thereby, and the products thereof, and every advance or loan hereafter made shall be deemed to be made upon the premises and agreements herein contained.

14. For the purposes hereof the word "Customer" shall extend to and include executors, administrators, successors and assigns of the undersigned.

If the
Customer is
a Company
the Corporate
Seal must
be affixed.

FORM No. 107 "C"

SECURITY UNDER SECTION 88 OF THE BANK ACT

No.
\$(1) Here
describe fully
the Bills
or Notes.

In Consideration of an advance of Dollars, made by the IMPERIAL BANK OF CANADA to the undersigned, for which the said Bank holds the following Bills or Notes: (1)

Date of Note	Promissor	Endorser	When Payable	Amount

the products of agriculture, the forest, quarry and mine, the sea, lakes and rivers, the live and dead stock, and the products thereof, and/or the goods, wares and merchandise mentioned below, are hereby assigned to the said Bank as security for the payment of the said Bills or Notes, or renewals thereof or substitutions therefor and interest thereon.

This security is given under the provisions of Section 88 of the Bank Act and is subject to the provisions of the said Act.

The said products of agriculture, the forest, quarry and mine, the sea, lakes and rivers, the live stock and dead stock, and the products thereof, and/or the goods, wares and merchandise, are now owned by, and are now in the possession of the undersigned, and are free from any mortgage, lien or charge thereon, (excepting only previous assignments to the said Bank, if any) and are in (2)

or in transit thereto or therefrom; and are the following; all the (3)

and products thereof and all products of similar goods now on hand situated at the places aforesaid and every of them, estimated quantities as follows: about (4)

and all other products, goods, wares and merchandise in the place or places before mentioned or any of them, or in transit thereto or therefrom.

Dated at the day of 19 (5)

(P. O. Address)

N.B.—If necessary for want of space the Bills or Notes or the description of the goods may be set out in schedules to be annexed, in which cases insert in the appropriate spaces the words "those mentioned in the schedule attached hereto."

A schedule signed by the customer showing goods on hand at date hereof, may be attached hereto. As new schedules are furnished new security covering the goods therein mentioned should be taken as security for all the outstanding notes.

Date	Goods Hypothesized	Goods Released	Goods on Hands	Loan Dr.	Payments Cr.	Balance

ROYAL GRAIN INQUIRY COMMISSION

Form No. 107 D.

Promissory Note
Produce Loan..

\$..... Place 192..
and
Date

On demand I promise to pay to the order of and at the IMPERIAL BANK OF
we CANADA, here, the sum of Dollars
with interest thereon from the date hereof until payment at the rate of per cent per
annum. Value received.

The foregoing Note is given to Imperial Bank of Canada for an advance made to
the undersigned under the provisions of sections 86 to 90 of the Bank Act (or any
sections substituted therefor) and the undersigned hereby promises to give to the
Bank, from time to time as required by the Bank, security and further security for the
foregoing Note by way of assignments and further assignments under said sections of
the Bank Act upon all the goods, wares and merchandise (as defined in the Bank Act),
live stock and dead stock of the undersigned, or by way of Warehouse Receipts or
Bills of Lading for the same or part thereof, and no security taken hereunder shall be
merged in any subsequent security or taken to be substituted for any prior security
and the Manager of the Bank or the Acting Manager for the time being is hereby
appointed the Attorney of the undersigned to give from time to time to the Bank the
security or further security above mentioned and to sign the same on behalf of the
undersigned.

Dated at this day of 192..

.....
The Borrower to sign here

FORM No. 107 "B"

HYPOTHECATION OF WAREHOUSE RECEIPTS OR BILLS OF
LADING AND DEFINITION OF POWERS OF BANK
WITH REFERENCE THERETO.

To IMPERIAL BANK OF CANADA.

In Consideration of an advance of Dollars
(To be written in full)

made by Imperial Bank of Canada to the undersigned for which the Bank holds (1) Here
the following Bills and Notes:—(1) describe bills
or notes.

the Warehouse Receipts and/or Bills of Lading following:—(2)

(2) Here
describe
Warehouse
Receipts or
Bills of
Lading.

are hereby assigned to the Bank as collateral security for the payment of said
Bills or Notes or renewals thereof or substitutions therefor and interest thereon, Reciepts or
and the undersigned (hereinafter called the "Customer") doth hereby consent
and agree as follows:—

1. If the Bank shall surrender to the Customer any Bill of Lading or Ware-
house Receipt so given, for the purpose of enabling the Customer to obtain
possession of any goods covered thereby from time to time, the Customer shall
receive possession of the said goods as bailee for and on behalf of the Bank,
and shall store the same for the Bank, and shall give to the Bank proper Ware-
house Receipts or securities under Section 88 of the Bank Act, or any section
substituted therefor, covering said goods.

2. That the Customer will keep all goods covered by the Warehouse Re-
ceipts, Bills of Lading and/or other securities given from time to time, and the
products thereof, insured against fire to the extent of the indebtedness secured
thereby, or to the full insurable value thereof in case such indebtedness shall
exceed such insurable value, and will assign the policies to the Bank, or have
the loss (if any) made payable to the Bank and the policies forthwith delivered
to the Bank. Should the Customer neglect to keep up such insurance, the Bank
shall be entitled, but not bound, to effect insurance thereon to such an extent
as it sees fit, and add the premiums paid and interest thereon at 7 per cent per
annum, calculated according to the Bank's usual custom, to the amount secured
by said Warehouse Receipts, Bills of Lading and/or securities, which premiums
and interest the Customer agrees to pay on demand.

ROYAL GRAIN INQUIRY COMMISSION

3. The Bank may from time to time, and either before or after default shall have been made in repaying the said advances or any of them, sell all or any goods covered by such Warehouse Receipts, Bills of Lading and securities aforesaid, and such sale may be by public auction or private sale, and either en bloc or in smaller quantities, at the Bank's discretion, or partly in one mode or partly in the other, and no advertisement or public notice of sale or notice to the pledgor of the time or place of sale need be given (the same being hereby waived), and every such sale is hereby consented to by the Customer, and shall confer upon the purchaser the absolute title to the goods so sold. Before exercising the foregoing powers the Bank agrees to give the Customer 24 hours notice of general intention to sell by posting a registered letter addressed to the Customer at the address subjoined hereto, but the want of such notice shall not affect the validity of any sale, and if such notice is once given it shall stand good for any sales whenever made.

In the event of any surplus remaining of the proceeds of the goods, after payment of the said advances, interest, premiums and charges, the Bank shall be entitled to apply such surplus in payment or reduction of any other indebtedness or liability, direct or indirect, of the Customer to the Bank, and such surplus is hereby assigned to the Bank for such purpose.

The word "charges" shall include all expenses incurred by the Bank in recovering or enforcing payment of the said advances, or realizing upon any securities therefor, including expenses of taking possession, protecting and realizing upon the goods, or upon insurance policies thereon, all of which, with interest at the rate, and calculated as aforesaid, the Customer agrees to pay.

4. If with the consent of the Bank, any of the goods or the products thereof are removed, other goods, of substantially the same character and of at least the same value as those so removed, shall be thereupon forthwith substituted therefor, and the Customer hereby agrees, so often as every such removal and substitution shall take place, to give and shall give Warehouse Receipts, Bills of Lading or securities under the Bank Act covering such substituted goods, all of which shall be subject to the provisions hereof.

5. The Bank may compromise, settle or adjust any claim, dispute or difference which may arise in respect of the goods or the proceeds thereof, and shall not be responsible for any neglect or delay in taking possession of, manufacturing, selling or realizing upon any goods or the products thereof, nor for any neglect or failure to exercise or enforce any of the powers or rights vested in or hereby granted to the Bank, nor for any act, default or misconduct of any agent, officer, employee or servant, and the Bank shall be accountable only for such moneys as it shall actually receive.

6. The benefit of all rules of law or equity, and of all statutes now or hereafter in force inconsistent with any of the provisions hereof, is hereby waived by the Customer.

7. For the purposes hereof the word "Customer" shall extend to and include executors, administrators, successors and assigns of the undersigned.

Dated at the day of 19 . . .

Signature

P. O. Address

If a
Corporation,
Corporation
Seal MUST
be attached.

THE WINNIPEG GRAIN EXCHANGE

DESCRIPTION

Of all the institutions connected with the grain trade of Canada, the most important is the Winnipeg Grain Exchange. Its constitution, and its practices have given rise to much controversy in the past, and were the subject of lengthy investigation by the Commission. The many questions affecting it which require treatment in this report make it necessary for us to trace its origin and its growth, and to describe its activities in brief form. We shall then proceed to dispose of the complaints which concern it.

Development.

The development of great produce markets is a phase of the division and specialization of labour. The concentration of population that accompanies large scale production in industrial areas leads to the importation of food supplies in large volume. On the other hand, large areas devoted to specialized agriculture create an exportable surplus of food products. The connecting links are transportation facilities for the physical movement of the commodities and recognized market places with known methods of trading where the buyer may meet the seller, trade and transfer ownership. The form of organization that these market places assume depends in large degree upon the exact nature of the commodity there sold, as well as upon the general degree of intelligence in the two parties to the exchange.

The technical conditions which make it possible for a commodity to be bought and sold in a highly organized exchange are:—

- “(1) The product must be sufficiently durable to enable stocks to be carried for a period of time without deterioration, e.g., from a period of low prices to higher.
- “(2) The product must be one that can be numbered, weighed or measured with accuracy.
- “(3) The quality or grade should be capable of determination yielding the same results when tested by competent officials at different times and in different places.
- “(4) The dealings in the commodity must be of sufficient volume to occupy large bodies of buyers and sellers.
- “(5) The commodity must be one where supply does not vary quickly through rapid changes in the rate of production.”

(Organized Produce Markets, by J. T. Smith.)

These conditions are fulfilled by wheat and other grains. Grain supplies can be carried over from one season to another with practically no deterioration. Grain is easy to weigh or to measure and travels well. Definite systems of grading have been devised and are well known. Grain is only produced seasonally. There is a wait from one crop to another. The volume grown upon the North American continent has increased in the last fifty years by leaps and bounds. The figures for wheat alone for 1922 for Canada and the United States show a production of 1,255,997,000 bushels, with exports of approximately 500,000,000 bushels.

Under these conditions there has been a corresponding development of highly organized grain markets. Well known exchanges in the United States are those located at Chicago, Minneapolis and Kansas City. In 1883 an attempt was made to form a grain exchange in Winnipeg, but the attempt failed. The production of grain in Western Canada was then in its infancy. In 1887 a second and successful attempt was made and the Winnipeg Grain and Produce Exchange was formally opened. It was incorporated in 1891 by an Act of the Manitoba Legislature. In 1908 this exchange disappeared and was followed by the present Winnipeg Grain Exchange, a voluntary non-incorporated association. Increased crop production in the Canadian west has led to its continuous expansion until to-day it ranks as one of the greatest organized grain

markets upon the American continent or indeed in the world. So far as cash wheat is concerned Winnipeg is the largest cash wheat market in the world. In addition to this market there are exchanges at Calgary, Fort William and Vancouver, with beginnings elsewhere. Here discussion will be confined to the Winnipeg Grain Exchange.

Objects.

A grain exchange is essentially an organization to facilitate buying and selling grain by its members rather than a body that itself engages in trading. The objects of the Winnipeg Grain Exchange, as set forth in their constitution are:—

(a) To compile, record and publish statistics, and acquire and distribute information respecting the grain, produce and provision trades, and promote the establishment and maintenance of uniformity in the business customs, and regulations among the persons engaged in the said trades; to inaugurate just and equitable principles in trade, and generally to secure to its members the benefits of legitimate co-operation in the furtherance of their business and pursuits.

(b) To organize, establish and maintain an association, not for pecuniary profit or gain, but for the purpose of promoting objects and measures for the advancement of trade and commerce respecting the grain, produce and provision trades for the general benefit of the Dominion of Canada, as herein provided; to acquire, lease or provide and regulate a suitable room and place for a Grain and Produce Exchange and offices in the city of Winnipeg, and encourage the centralization of the grain, produce and provision trades in the city of Winnipeg, Manitoba; to facilitate the buying and the selling of the products in such trades; to promote and protect all interests concerned in the purchase, sale and handling of the grain, produce and provision trades; to inspire confidence and stability in the methods and workings and integrity of its members; to provide facilities for the prompt and economic dispatch of business; to avoid and amicably adjust, settle and determine controversies and misunderstandings between persons engaged in the said trades, or which may be submitted to arbitration as hereinafter provided: To all of which ends the said association is hereby empowered by vote of its members at any annual, general or special meeting of the association, to make all proper, needful, by-laws, rules and regulations for its government, and administration of the affairs generally of the said association, provided always such by-laws are not contrary to law, and further, to amend and repeal such by-laws, rules and regulations."

Membership.

The last available membership statement of the Exchange shows a membership of 355 men holding altogether 402 membership certificates. (The member who holds more than one certificate has only one vote). Members may be engaged in more than one phase of the grain business but the main business done may be classified thus:—

Elevator Managers	120
Millers and Maltsters	21
Cash Grain Commission Merchants	32
Cash Grain Brokers	13
Futures Brokers	50
Shippers and Exporters	81
Vessel and Insurance Agents	10
Bankers	8
Officials	3
Non-active	17
	355

The bankers, officials and non-active members do not trade in grain. The vessel and insurance agents represent the transportation companies that carry grain across the lakes. It is their business to charter lake tonnage and provide marine insurance. Of the remaining 317 members, 50 are primarily engaged in "futures" trading, and 267 in the handling and marketing of cash grain. These are the elevator men, the cash grain commission men, the cash grain brokers, the millers and maltsters and the shippers and exporters.

Membership in the Exchange is obtained by written application to the Council, signed by the applicant. This application is verified by a statutory declaration and sets forth the name, residence and business avocation of the applicant, with such further information as the council may require. In addition the application must be accompanied by a signed agreement on the part of the applicant to be governed by the constitution, by-laws, rules and regulations of the exchange. Unless excused by a vote of not less than two-thirds of the members of the council present at the meeting the applicant must personally appear before the council to answer questions which may be put to him. If the council denies the application the applicant has the right of appeal to the whole membership of the exchange. In this event a vote by ballot is taken and if the applicant receives seventy-five per cent of the votes cast or over he becomes entitled to become a member of the exchange. Before being admitted he must pay a membership fee of \$7,500 or secure by purchase and transfer a certificate of unimpaired or unforfeited membership. The last sale of a seat was at \$6,400. Members may have in their own name more than one membership certificate but they have only one vote. There is an annual subscription which must not exceed \$80 for each outstanding certificate.

Members of the exchange have the right to register with the exchange firms or corporations on application. Both the members registering such firms or corporations and the firm or corporation itself enter into an agreement with the exchange that the said firm or corporation will observe faithfully and be obligated by all the by-laws, rules and regulations of the exchange. Upon registration such firms or corporations are entitled to all the rights and privileges, and are subject to all the restrictions, duties, liabilities, etc., of members of the exchange for the current year, and so on, subject to renewal, from year to year. The registering member or members alone represents their firm or corporation on the exchange.

Management.

The exchange is conducted by a council of management consisting of a president, two vice-presidents, twelve other members of the exchange elected at the annual meeting and a secretary-treasurer or a secretary and treasurer. There are two elected committees of seven members each, the committee of arbitration and the committee of appeals. Members are not allowed to serve on both committees, but members of the council of management may be also members of one or the other of the elective committees. In addition, the council of management appoints members to 12 other committees, each charged with the supervision of some particular aspect of the activities of the exchange. Members of the council of management appear generally on one or more of the appointive committees. The active management and effective control of the institution rests therefore in the hands of probably less than a score of members of the exchange.

Equipment.

The grain exchange is housed in the Grain Exchange Block, a very large office building, which contains, apart from the trading room of the exchange and the necessary board and secretarial quarters, the offices of a great many of the grain companies with headquarters or branches in Winnipeg. In this building are also located the offices of the North West Grain Dealers' Association and the Winnipeg office of the Lake Shippers' Clearance Association. The Grain Exchange association provides a large room for trading purposes. The mechanical fittings for trading are: two pits, one for coarse grains and one for wheat; a pulpit with four occupants, one to get the wheat prices and have them shown on the blackboard, and, for the current month, on the electric clock; another to get the coarse grain prices and phone them to the blackboard.

operators; a clerk to record all these prices; and a fourth to operate the telegraph service sending out Winnipeg quotations to other markets.

Trading.

The trading hours are from 9.30 to 1.15. Saturday to 12 noon. Between April 30th and September 29th inclusive the hours are 8.30 a.m. to 12.15 noon, Saturday 11 a.m. The various grades of wheat and coarse grains are bought and sold by open offer and acceptance in the pits. Contracts are made for cash grains in various "positions." Grain may be dealt in "on track," "billed and inspected" or "spot." Grain sold "on track" means that the grain is in the cars of the railroad and delivery is made by handing over the railway advice note with the bill of lading properly endorsed to the buyer and with freight and shunting charges duly receipted thereon for delivery at the head of the lakes. If the freight and charges are not paid these are deducted from the invoice. Grain sold "on track" commonly has not had official inspection and the sale is made on the basis of some grade. Should the grain when inspected not be of that grade, settlement is made on the relative value or spread of such other grade of grain on the day of inspection. Grain sold when "billed and inspected" means that the grain has passed through the Winnipeg yards and has had official inspection and is on its way to the head of the lakes. "Spot" grain is grain in store in regular terminal elevators at Port Arthur or Fort William. It may also be "spot" Duluth. Delivery is made by the surrender of the warehouse receipts. In all sales for cash, payment is to be made on presentation of the proper documents within not less than thirty minutes of the closing hour of the bank on the bay of the presentation, unless there is a special agreement. Under certain conditions premiums are offered for grain over the current market price. These premiums will be discussed elsewhere.

Trading in "Futures."

Trading in "futures" means that contracts are entered into for the purchase and sale of grain to be delivered during some future month. Future trades are usually made for delivery in October, November, December, May or July. Because of the conditions under which grain is shipped out of Fort William and Port Arthur these months have proved most convenient for arranging contracts for future delivery. The ordinary unit of trading in future contracts is 5,000 bushels, in case of flax seeds 1,000 bushels. On all trades of grain for future delivery, unless otherwise specified, delivery is required to be made in the contract grades in force at the time the contract is made. On all contracts based on these grades all higher grades of the same grain may be so delivered. In wheat the contract grades are Number One Hard, and Numbers One, Two and Three Northern. Delivery of the grain in fulfillment of a future contract is made by registered warehouse receipts. At the time of the completion of the contract the grain must be in store in a "regular" warehouse or "regular" storehouse at Port Arthur or Fort William.

When a contract is made for the future delivery of grain both parties to the contract may demand then or subsequently that five cents per bushel margin shall be deposited and kept good—based on the market value—until the contract has been carried out. These margins must be deposited in one of the regular chartered banks. If the price fluctuates either party may be called upon to protect his margin and if he fails to do so the party who has called for such margin shall have the right to buy or sell, as the case may be, the property named in the contract. The difference between the contract price and the price at which the property has been sold or bought will be the measure of damages against the party in default. The rules of the exchange further provide that in case the party calling for margins shall elect not to buy or sell the property he

may have the right to consider the contract terminated at the market price of the property named for the delivery specified in the contract. Here also the measure of damages is the difference between the contract price and the market price at the time of giving notice. In case any property contracted for future delivery is not delivered at maturity of contract the purchaser may purchase the property on the market for account of the seller before twelve noon of the next business day notifying of such purchase, or he may require a settlement with the seller at the average market price on the day of maturity of the contract. He can then claim on the seller for any damage or loss due to the purchaser by reason of such purchase or declared settlement. In event of dispute the rules provide for a committee to investigate and assess the damages.

Where future contracts are made between members of the exchange who are also members of the Winnipeg Grain and Produce Exchange Clearing Association the contract may be cleared through this association and under its rules. The clearing association is designed to facilitate the exchange of future contracts.

Commission and Brokerage Rates.

The grain exchange as an association fixes the minimum rates which all members must charge for the transaction of business for non-members or for fellow members. These rates are a fixed rate per bushel rather than a percentage of the selling price. They are as follows:—

SUMMARY OF COMMISSION AND BROKERAGE RATES.

	Wheat	Oats	Barley	Flax	Rye
	c.	c.	c.	c.	c.
<i>Cash Grain—</i>					
Commission—					
Non-members.....	1	5	1	1	1
Members.....	½	½	½	½	½
Brokerage.....	½	½	½	½	½
Buying.....	1	1	1	1	1
Selling, and Shipping.....	½	½	½	½	½
<i>Futures—</i>					
Commission—					
Non-members.....	1	1	1	½	1
Members.....	½	½	½	½	½
Brokerage—					
Per 1,000 bushels.....	25	25	25	50	25
When trades taken over by principal same day	35	35	35	60	35
Clearing—					
Closed within six days.....	½	½	½	½	½
Not closed withing six days.....	½	½	½	½	½

It is to be observed that the charges which most directly affect the farmer are the commission rates on cash grain. The buying, selling and shipping rate affects the sale of grain to the exporter. An exporter who is not a member of the exchange and desires to buy a parcel of grain will pay the 1-cent bushel rate to the member of the exchange who executes his order. The broker finds his employment chiefly in the fact that large buyers or sellers desire to conceal their operations. Instead of going into the pit themselves to dispose of or to pick up a large parcel of grain they will employ a broker. In this way it will not be known who is buying or selling. Brokers' trade is consequently almost wholly within the exchange and between members of the exchange.

Volume of Trading.

The volume of grain dealt in annually at Winnipeg is very large. Thus, for the crop year ending August 31, 1923, wheat inspected in the Western Inspection Division amounted to 297,256,700 bushels. Of this, 295,246,417 bushels were

disposed of commercially. There was a total all rail movement eastward of 20,361,532 bushels. Lake shipments from the head of the lakes were 229,176,919 bushels. The figures for coarse grains are: oat inspections in the Western Inspection Division 48,944,000, disposed of commercially, 39,691,717; barley inspections 18,804,775, disposed of commercially, 17,404,199; rye inspections 3,631,500, disposed of commercially, 11,995,533; flax inspections 3,631,500 bushels. (The figures are not available for the amount of flax disposed of commercially). From these figures a fair idea of the actual volume of physical grain bought and sold in the Winnipeg cash market may be inferred. So far as the growth of future trading in Winnipeg is concerned it is more difficult to give figures. Winnipeg is subordinate to Chicago in future trading. It is only in recent years that grain dealers in other lands have been using the Winnipeg market for hedging purposes; formerly they hedged chiefly in Chicago. In 1921 it was stated that there was cleared through the Grain Exchange from September 1, 1920 to April 21, 1921, a total of 1,466,892,500 bushels.

"Regular" Elevators.

In connection with the trading on the exchange it is to be noted that in all cases where delivery is being made on future contracts at the time of completion of the contract the grain must be in store in an elevator or warehouse at Fort William or Port Arthur which has been declared by resolution of the Council of Management of the Exchange to be a "Regular" elevator or "Regular" warehouse. "Regular" elevators must be connected with one or more of the eastern railway lines and must have direct facilities for lake shipment. A further condition of "regularity," (exception made for an elevator controlled and operated directly by the Government of Canada or the Board of Grain Commissioners), is that the person operating the terminal elevator must be a member of the exchange or if it be a firm or corporation the same must have become entitled to the rights and privileges of the exchange by being registered by a member of the exchange.

Private elevators at Port Arthur or Fort William may be declared "regular" by the council of the grain exchange on application. These elevators are required to file a bond with the grain exchange, as well as with the Board of Grain Commissioners. The basis of the bond filed with the Grain Exchange is not less than 15 cents per bushel upon the capacity of the house, but in no event to be less than \$75,000.

Warehouse receipts on grain stored in a private regular elevator may then be obtained. These receipts are registered as to weight by the Board of Grain Commissioners and as to grade by the Registrar of the Winnipeg Grain Exchange. In this way the intervention of the Exchange permits certain private terminals to be put approximately in the position of the public terminals where warehouse receipts are registered both as to quantity and grade by the Board of Grain Commissioners.

Market Information.

The Grain Exchange as an association collects and makes available information on the movement of grain, the receipts at points of special importance, the visible supply, inspections, crop estimates, etc. No member, however, without permission of the council of management may publish or report for publication quotations of foreign or domestic markets, statistics, or other data officially procured or compiled by the exchange.

The exchange appoints a committee known as the Cash Closing Price Committee which compiles the closing prices on the exchange. These prices are posted on the exchange daily at the close of trading. They become the basis of the price list prepared by the Price Committee of the North West Grain Dealers' Association.

Arbitration.

Provision is made by the by-laws of the exchange for the adjustment of all disputes between members. The aim is to supply arbitration machinery which will obviate expensive appeals to the law courts and at the same time settle disputes expeditiously.

Licensing of Country Agents.

A by-law of the exchange requires that no member of the exchange shall employ any country agent unless that country agent is licensed by the exchange. By this regulation the exchange not only exercises a direct influence over the personnel employed in the country elevators of the line companies but also brings within its purview any agents that commission houses may employ to drum up shipments.

The North West Grain Dealers' Association.

The North West Grain Dealers' Association is a corporation existing under an Act passed by the Legislature of the Province of Manitoba in 1904. Its membership consists of the line elevator companies and flour mill companies operating a line of elevators. The United Grain Growers and the Saskatchewan Co-operative are not members of the association but are members of an Inspection Bureau conducted by the association. The association buys and sells certain supplies for its members such as gasoline, lubricating oil, fire extinguishers, etc., issues a crop estimate and operates an Inspection Bureau. The Bureau reports on the physical condition of each elevator and also reports three times a year on the country agents.

In addition there is a committee of three members of the association, known as the Price Committee which sends out a minimum list of prices, including street prices, at the close of the market each day. This price list is sent out through the Dawson Richardson Company to the country agents of the companies that belong to the association in Manitoba and Saskatchewan. A similar service is provided by the Western Grain Dealers' Association from Calgary to the members of that association in Alberta. In this way the grain exchange prices reach back to the farmers selling grain at local points.

The North West Grain Dealers' Association, while quite distinct in organization from the Winnipeg Grain Exchange, is closely related to it. All of the directors are members of the Exchange. The chairman of the price committee was a member of the council of management in 1922-23.

Lake Shippers Clearance Association.

There is also the Lake Shippers' Clearance Association. Its membership consists of the shippers and terminal companies. It was organized in 1905 and is a co-operative mutual association not incorporated, and operates as a clearing house for grain documents. The directors, with one exception, and the general manager are all members of the exchange. In 1922-23 four of the seven directors were also members of the council of management of the grain exchange.

The Winnipeg Grain Exchange is thus the centre of a wide and intricate organization which dovetails together and exercises large control over the grain trade. This control touches the personnel, the documents, rates of commission, and the general methods of trading. It exists from the time grain enters a country elevator until it leaves the terminal elevator. It is, of course, not the only control exercised over the grain trade. There is control exercised through the Canada Grain Act and the Board of Grain Commissioners acting under that statute.

COMPLAINTS AGAINST THE WINNIPEG GRAIN EXCHANGE

In a general way the farmers' complaints against present methods of marketing grain focus upon the Winnipeg Grain Exchange as the head and shoulders of the present system. The grain exchange, as the most important organization of the grain handling interests, carries the burden of any attack launched. An analysis of the various grievances formulated does not necessarily connect them all with the exchange. Such complaints as the alleged undue profits made by the country elevator companies, undue spreads between street and track grain, are properly part of the inquiry into the country elevator system and are discussed there. In the same way a series of problems arise which connect themselves with the operations of the terminal elevators. There are, however, certain charges or grievances whose incidence is directly against the exchange itself. These may be summarized as follows:—

- (1) That the Winnipeg Grain Exchange is an organization by which those interested in the movement of the western crop; elevator companies, railways, banks, etc., dominate the marketing of grain in a manner detrimental to the farmer and the country. In brief, that, in a general way, it is an organization in restraint of trade.
- (2) That speculation either on the cash or futures market injuriously affects the farmer and the community: (a) the price of grain is thereby unduly depressed in the autumn when the farmers are selling the bulk of their crop; (b) lucrative profits are made by speculators, scalpers, etc., through gambling with the farmers' product; (c) disastrous losses are made in speculation.
- (3) That there is too large a spread between the prices on the Winnipeg exchange and those on the exchange in Liverpool.
- (4) That the rule of a minimum commission charge per bushel on cash grain is too rigid and does not accommodate itself to variations in price.
- (5) That the grain exchange exercises a sinister influence over the official grading of grain.

It is fair to observe that while charges or complaints of the above nature were put forward from time to time during the course of the investigation, on the whole there was not any large volume of complaint directed against the specific functions of the exchange. The complaints were rather of a general nature, and, as already observed, touched the exchange because of its conspicuous position in the grain trade.

We shall now proceed to consider these charges *seriatim*.

Character of the Exchange

- (1) That the exchange is an organization of the grain handling interests detrimental to the farmers and in restraint of trade.

It is quite true that the grain exchange brings together the various interests engaged in marketing, financing and forwarding grain, and that as an organization it regularizes and enforces certain rules as to the methods by which business must be carried on. In this manner as an association it exercises considerable control over the marketing of grain. These are among the objects for which it was formed. The real question, however, is this: whether the nature of the activity makes it possible and the nature of the control that it exercises are detrimental to the interests of the farmer and the community at large. The broad fact that the men and the companies, interested in the movement of grain, have united to form an organization or a number of organizations to facilitate their business and to protect their interest, in itself, no more places them outside the protection of the law than any other organizations with a

similar aim such as the Canadian Manufacturers' Association, or the United Farmers of Manitoba or Alberta.

In 1907, the Government of Manitoba brought the exchange into court. Mr. Justice Phippen pointed out in the judgment delivered at that time that the right of a particular trade, business or class of traders to protect their property by regulations and agreements, so long as the public interests were not unduly impaired, must be respected. He found that there was no conspiracy to limit unduly the facilities for transporting, producing, manufacturing, supplying or dealing in grain.

The present lengthy and searching investigation does not seem to have disclosed any fact of such importance as, in a general way, to disturb this finding. The Winnipeg Grain Exchange does not appear to have erected undue barriers to the "free and natural competition of commerce." And it must be emphasized that freedom of competition, under the present system of organization, is the surest guarantee to the farmer that undue profits are not being made or that the best service is not being rendered. Several large crops in succession, a period of rapid expansion in grain growing due to high prices or immigration, some technical advance in the method of handling grain, may lead in some instances to generous profits for a year or two. But relatively large profits inevitably attract into the industry more capital and keener competition with an ensuing fall in the level of profits.

At the present time there is no evidence that bona fide traders or dealers in grain have been prevented from becoming members of the Winnipeg Grain Exchange and sharing in the advantages that the organization offers. The United Grain Growers, The Saskatchewan Co-operative Elevator Company, both large farmer companies, are important traders in this market. Mr. James Murray, of the United Grain Growers' Company, is a member of the committee of arbitration for 1923-24. Recently the Alberta Wheat Pool, which stands for a particular theory of buying and selling, obtained representation on the exchange and makes use of its facilities for cash and future trading. The grain exchange cannot, therefore, be deemed a close corporation which keeps out its membership all new competitors appearing, thereby restraining them from taking advantage of the facilities for marketing that have developed in Western Canada.

It is to be pointed out that the licensing of country agents provided for in by-law 20 does not go beyond requiring that persons in the country who solicit business on behalf of members of the exchange shall have their position regularized and be paid a certain salary for their services. Essentially this requirement is closely bound up with the fixed commission rule. It is aimed at preventing the practice of employing touts or agents to canvas for business in the country on such a basis as really would mean splitting the commission.

Nor is there the least evidence to show that individuals or companies who are not themselves entitled to trade on the exchange encounter the least difficulty in making use of its facilities either through the commission or brokerage houses or through the commission departments of the large companies. These interests are in sharp competition to obtain and execute orders. Many farmers load their grain over the platform into cars at local points and sell it directly on the exchange through their commission agents.

Moreover, evidence was given at a considerable number of points by farmers to the effect that their method of marketing grain was to sell it in the autumn at the time of delivery, and then to buy a future which they sold at a later date in the season. This was done, they said, because they found it more convenient to hold a contract for the future delivery of grain which they could sell when the market suited them, than to hold the physical grain itself.

In so far as the exchange, therefore, is an organization to provide for the maintenance of a market place, it forms, without undue restriction, a necessary and beneficial link in the marketing of western grain. The Exchange does not of itself buy or sell grain. It does set up the machinery under which grain can be conveniently bought and sold. It does not appear, then, that there are any undue restrictions placed either upon obtaining membership in the exchange, or upon making use of this machinery in the buying and selling of grain.

Speculation.

(2) That speculation, either on the cash or futures market injuriously affects the farmer and the community.

The term "speculation" has a great many shades of meaning, and, as a result, there is a great deal of ambiguity in its use. It is often defined in business as the taking of necessary risks, and in this sense covers an element in all business activity. The term as usually applied to operations on the produce market means technically purchasing on "the expectation of a contingent advance in value and consequent sale at a profit" or "trading on anticipated fluctuations in price" either as between different times or different markets. The term speculation is also often used in a depreciative sense as the equivalent of gambling, although gambling in business is not infrequently defined as the taking of unnecessary risks. In all cases the forms that the actual transactions assume on the exchange are practically the same. Under these circumstances discussion as to the validity of speculation very often leads to controversies at cross purposes.

The lack of precision in the use of the term has been illustrated at various times in the evidence that has been tendered to this commission. For instance, it has been maintained that the farmer who holds his crop in his granary until mid-winter and then sells, although he might have delivered and sold it early in the autumn, is engaged in a speculation, in that he is holding his grain for a contingent rise. That practically speaking there is no difference in the decision to hold grain available for sale and that of buying a future upon the exchange and holding it for a rise. On the other hand some farmers sell their grain early in the season and then invest the proceeds in a future which they sell later on. It was argued by them that this was not a speculative venture since as a precedent act they had sold cash wheat.

Probably the simplest method of approaching a consideration of speculation is to examine the various uses to which the futures market is put and the classes which have recourse to it. Speculation is most commonly associated with the futures market and against it criticism is especially directed.

Hedging.

In the first place country elevator companies, operators of private terminal elevators, exporters, foreign importers and millers all use the futures market for purposes of hedging. Professor A. B. Clark, Professor of Political Economy in the University of Manitoba, points out that "hedging on the grain exchange is simply a device by which the holder of wheat seeks to protect himself against the risk of loss resulting from an actual sale or purchase, through fluctuations in price by balancing against it an equivalent purchase or sale for future delivery."

"The operator of a country elevator, for example, in buying from a farmer, seeks to protect himself against the loss through a fall in price by selling on the exchange an equal amount for future delivery and the price he pays the farmer will be largely governed by the price he can secure for the sale of the future, being in fact less than the latter, by the amount of the storage, transport and carrying charges. In meeting this future the elevator operator may either make delivery of the actual grain or he may sell it for cash and purchase a future therewith to meet his contract."

It is evident that this transaction on the part of the country elevator company is a method by which it can limit its risk. Losses on either transaction will be balanced by gains on the other. It if had to buy its grain in the country and carry the risk of price fluctuations itself a company would require a much larger capital investment for business of the same magnitude. The cost of warehousing and marketing grain would be accordingly increased. This cost would ultimately fall upon the farmer.

H. T. Jaffray, Chairman of the western subsection of the Canadian Bankers' Association, estimated that there is about \$150,000,000 of credits granted each year to the western grain dealers, elevator companies, commission men and exporters to finance the moving of the crop. The ordinary customer of this group, however, borrows to the extent of 90 per cent of the amount of his purchase of grain, and of his advances to farmers on grain. In the ordinary case the bank requires the grain dealer to sell a future so as to be sure the bank is not taking too much risk. This is a definite term of the credits granted. Without a future purchase the bank would require the grain dealer to have a very large cash interest in his grain apart from what the bank put in. In the very great majority of instances grain dealers do not have a large investment of cash of their own in the grain they are handling. If the elevator companies could not buy grain and protect it by selling a future they would have to buy it on a larger spread between the price they paid the farmer and export prices. This would be necessary to allow for possible losses through fluctuations in price before they could get it to the export market.

The ability to hedge grain and thus limit possible losses increases the borrowing power of the grain dealer. It therefore makes it possible for him to do business with a smaller amount of capital. If hedging were abolished for a time, at least, by curtailing the operation of the grain dealers it would lessen competition. The effect of lessened competition would be that a farmer would get a lower price for his grain. Mr. Jaffray said he was not prepared to estimate whether the farmer would get "10 per cent less or 5 per cent less or 15 per cent less, but in his opinion he would certainly get a substantially smaller price."

The Alberta Pool which had received a line of credit, Mr. Jaffray stated, was not required by the banks to hedge its grain because the farmer gets only a partial advance and carries all the risk himself. That is, the farmer retains such a substantial interest in the grain until it is ultimately disposed of that it is sufficient to protect the advance the bank makes against any loss. Loss, if it occurs will fall upon the Pool members themselves. The witness believed that without hedging the farmer would be unable to dump his large crop on the market within three months of the harvest season without taking a smaller price for it. Evidence was later given by Chester Elliott, Western Sales Manager for the Alberta Pool, that the Pool had sold wheat for future delivery "when prices looked attractive" and had also used the futures market in connection with the export business "to accommodate the buyer." Mr. Elliott, however, said they did not use the market to hedge the grain of which control had been acquired in the country.

The same general considerations apply to the hedging operations of private terminal elevators, exporters, foreign importers and millers, so that hedging in these instances need not be discussed in detail. It is important however, to note that in connection with the sale of grain the ability of the foreign importer to limit risks by use of a future is of sufficient importance in itself to lead the Alberta Pool to enter the futures markets to meet the needs of importers even though, by reason of the farmer pool members carrying their own risk, it does not hedge the grain it actually acquires control of in the country.

It must be pointed out, too, that hedging operations furnish a very large part of the volume of business done in the futures market. At every stage in its progress from the producer to the consumer the grain is hedged. In every instance there is the same motive in doing so, the limitation of risks.

Pure Speculation.

There remains to be examined instances where purchases or sales are made not for hedging purposes but because the buyer or seller believes that he can make a profit by fluctuations in the price, up or down, as the case may be. At the outset it is necessary to point out that there does not seem to be a really large class of men operating on the Winnipeg Grain Exchange who devote their time solely to speculative transactions. A considerable number of speculative transactions appear to be made by those whose primary interests are in the operation of country elevator companies, exporting, or in other branches of the grain trade. In addition to this, transactions by farmers who have sold their wheat on the cash market and buy futures are prevalent. Finally, from time to time there are incursions of the general public into the speculative field, lured by what they believe to be opportunities to make easy money. It is thus more correct to examine the nature and effects of speculative transactions than to focus attention upon a supposedly large class of speculators upon the exchange who are pure speculators and nothing more.

Making a purely speculative purchase or sale of grain means that a judgment has been formed by the individual operating on the market at the time that the price of the grain traded in does not correctly take into consideration the future state of its supply and demand, and therefore of its price in the future. If the cash price in the judgment of the operator is too low he will buy and will carry the grain until the period when, if his judgment is correct, he can sell at a profit over and above his carrying charges. Conversely, if he deems the cash price to be too high he will sell a future, that is, he will take a commitment to deliver grain at a future date although at the time of the initial transaction he possesses none. He aims to purchase it later on as the market price falls, as he, in his judgment, believes it will. Similarly here if his judgment is correct, he will have a profit.

General Effects of Speculative Transactions.

It is obvious that professional speculation brings to bear very keen and alert intelligence upon the state of the market from day to day. If prices appear to be out of line with all the facts of the situation speculations sets up an activity which tends to bring them into conformity with the state of knowledge that exists as to supply and demand. The immediate response in speculative activity and a higher range in prices that followed the publication of official estimates of a short crop for the crop year 1924 illustrates the alertness of a futures market.

A second illustration of the effect of a futures market is to be found in its power to absorb large supplies of grain being dumped on it in the months immediately succeeding harvest without the price breaking disastrously. With the mills and other consumers of grain supplied for the time being, additional supplies brought to the market would not find purchasers easily and the price would decline sharply. But with a speculative element in play, as soon as the cash price falls sufficiently to leave an estimated margin of profit between it and the estimated future cash price (carrying charges allowed for), speculative buyers enter the pit and by buying to make this profit hold up the market price. It goes without saying that the keener the competition the narrower the margin of profit there will be over carrying charges.

Not only does the speculative element in this way help to carry the market but incidentally it also serves to establish a continuous market. By this is

meant that grain can be sold at any time. It does not tend to become a drug on the market, selling away below its value at certain seasons of the year. The speculative element stands ready to absorb offerings and thus to keep prices in line with the basic facts of supply and demand throughout the year. The notion that the prohibition of trading in futures would make prices higher in the fall to the farmer when he is pouring his wheat on to the market is unsound.

In its broadest economic aspect speculative trading by calling attention, at the earliest moment that information develops, to changing conditions of supply or demand, warns society that it is on the eve of a period of greater plenty or greater scarcity. The knowledge of a large or a short harvest begins to exert its effect on prices some time before the grain is actually garnered. A fall in prices thus gives notice that a more lavish use of grain and its products is possible. An early rise checks consumption and leads to a conservation of the supply throughout the period of scarcity. The general effect of these reactions by society to high or low prices is to limit the amplitude of the fluctuation in prices. Speculation thus exercises a stabilizing influence.

It must be remembered of course, that speculators do not always form the correct estimate of the future conditions of supply and demand. When this occurs, society, far from benefiting from their activity, suffers. Fluctuations in price are magnified rather than reduced. At the same time it must be noted that the penalty for erroneous judgment that falls upon the speculator himself is loss, often heavy loss, and not infrequently ruin. Occasionally a speculator makes very large gains and these gains are given wide publicity. They are to be balanced by the very heavy losses that even competent speculators make from time to time. Also almost invariably when heavy gains are made by someone they are due to an extremely careful study of conditions which have led a speculator to place his judgment successfully in opposition to the general point of view of the market and of the public.

There is undoubtedly a great mass of suspicion directed against the operations on the exchange. It is commonly believed that the market can be rigged without difficulty, false statements circulated to deceive the farmer, and the market cornered with a little astuteness. There is really no evidence before the commission to justify such a conclusion, nor can countenance be found for such a view in the by-laws of the exchange. As has already been pointed out these provide penalties against the issuance of estimates without official permission, while the designation of several grades as available to fill future contracts is aimed at preventing "corners." The by-laws provide for the expulsion of members guilty of dishonourable conduct.

There is no doubt a considerable volume of speculative transactions entered into by individuals who are not in any way connected with the growing of grain or with the grain trade. Commonly people of this class, and many also of the grain growing class, do not bring a trained intelligence to bear upon the market. It is conceded that these individuals usually lose the money they invest in speculation. John G. McHugh, Secretary of the Minneapolis Chamber of Commerce, one of the largest grain exchanges in the United States, remarks in his work on *Modern Grain Exchanges* that: "the injury inflicted upon these individuals by their losses is out of all proportion to the services which their speculative trades perform in crop distribution."

Legislation Against Speculation.

Legislation of this sort is suggested (1) in order to protect the weak and incompetent from their own mistakes, and (2) to prevent what are said to be undue fluctuations in prices working to the detriment of the producer. In our opinion many obstacles stand in the way of enacting legislation which would be effective for either purpose. "Legislation so contrived as to affect the

gambling transactions and leave the legitimate ones untouched is extremely difficult to make. The distinction in law cannot be based on the subject matter of the transaction. The illegitimate speculations deal with the same articles as the legitimate ones.

The Criminal Code of Canada provides as follows:—

“Section 231: Everyone is guilty of an indictable offence and liable to five years’ imprisonment, and to a fine of five hundred dollars, who, with the intent to make gain or profit by the rise or fall in price of any stock of any incorporated or unincorporated company or undertaking, either in Canada or elsewhere, or of any goods, wares or merchandise,—

“(a) without the bona fide intention of acquiring any such shares, goods, wares or merchandise, or of selling the same as the case may be, makes or signs or authorizes to be made or signed, any contract or agreement, oral or written, purporting to be for the sale or purchase of any shares of stock, goods, wares or merchandise; or

“(b) makes or signs or authorizes to be made or signed, any contract or agreement, oral or written, purporting to be for the sale or purchase of any such shares of stock, goods, wares or merchandise in respect of which no delivery of the thing sold or purchased is made or received, and without the bona fide intention to make or receive such delivery.

“It is not an offence under this section if the broker of the purchaser receives delivery, on his behalf, of the articles sold, notwithstanding that such broker retains or pledges same as security for the advance of the purchase money or any part thereof.”

This provision of the code was brought to our attention on several occasions during our sittings at country points. We have already referred to the practice followed by some farmers of selling their grain on the cash market and investing the whole or part of the proceeds in a future. In such cases the farmer always acts in the expectation that he will never be called upon to take actual delivery of the grain represented by the future contract. He plans to watch the market and to sell his future when he deems the time has come to do so to the greatest advantage. In some cases he is successful and sells it at a profit, but in other cases he waits too long, or the market never supplies the advantageous opportunity for which he had hoped, and he is obliged to take a loss. In either case, the gain, or the loss, is measured between the price paid for the future contract, and that at which it is sold. The circumstances surrounding the transaction between the commission merchant and the farmer, including the tenor of the written memorandum which is executed in the ordinary case, may reveal an “intention to take delivery” sufficient to satisfy the statute. It may be that such an intention is sufficient, if it amounts to nothing more than an agreement by the farmer to take the grain if ever he should be called upon to do so (a contingency which rarely, if ever, happens), and that it is not inconsistent with the expectation, which no doubt leads him to buy the future and which is realized in practically every case, that the transaction will end simply in a set-off or a payment of differences. It is not, of course, within our competence to deal authoritatively with the strictly legal aspect of the question, but we have endeavoured to enlighten ourselves as to the state of the law and we venture to express the opinion that the decisions of the Canadian Courts have not yet settled the main question as to the condition of guilt or innocence, under the statute, of the farmer or other speculator who buys a future and holds it for re-sale in the manner which we have described. (Beamish v. Richardson, 49, S.C.R. 595; Medicine Hat Wheat Co. v. Norris Commission Co. (1919) 1. W.W.R. 161; Maloof v. Bickell, 59 S.C.R. 429; Woodward & Co. v. Koeford (1921) 3 W.W.R. 232). All these cases are civil cases where the statute was raised as a defence against a broker or commission merchant seeking to recover from a speculator on whose behalf he had incurred expenditure. Such cases carry with them considerations which prevent the plain question of criminal law being determined. For instance, the agent’s own unlawful intention may also be necessary in order to defeat his civil action (see per Dennistown J. in

Woodward v. Koeford at p. 244); and this is not being shown, the case goes off without deciding the question as to whether the buyer has violated the statute. Although section 231 has been part of the criminal law of Canada since 1888, and has been discussed on many occasions in actions arising out of transactions on grain exchanges, we cannot find a single case of a prosecution brought in the criminal courts against a party who participated in any such transaction. In so far as the criminal law is concerned, this section appears to have been used only to punish offenders whose transactions never reached an exchange, as, for instance, in the case of *Rex v. Harkness*, 10 Can. C.C. 199. When first enacted in 1888, this provision was expressly directed at the business conducted in "bucket shops", where simple bets are made upon the rise or fall of prices and where the figures quoted, unlike those quoted on an exchange, have no effect whatsoever upon the state of the market. The object of the legislation, therefore, was not, either entirely or partly, to protect the market by preventing unwarranted fluctuations in prices, but merely to suppress an institution which was deemed to be a nuisance as having the character of a common betting-house or a common gaming-house. Those responsible for the administration of the criminal law seem to have continued to regard this section as if it was intended to achieve its original purpose only. Nevertheless, in its present form in the criminal code this section contains no reference to "bucket shops" but simply prohibits the act of buying or selling in the manner above described regardless of where the buying or selling may take place. It is therefore an offence which may be committed in a place which could not fairly be called a bucket shop. This is the interpretation placed upon it in some of the civil cases mentioned above where the transaction in question took place in an exchange. The statute is aimed directly at those who buy or sell with the intent to make gain by the rise or fall in price and without the bona fide intention of taking or giving delivery of the goods. Of course any broker or other person who knowingly advises or assists in putting through any such prohibited transaction is also guilty under the statute. It was argued on behalf of those who believe in future trading by farmers, that the money invested by them in futures having been realized by the sale of actual grain, their case is different in the eyes of the law from that of the city dweller who speculates with money earned in another occupation. We cannot see how any such distinction can be drawn effectively. The transaction attacked by the statute is the one whereby the future contract is made; it is the nature of this contract which is involved, and the intention behind it. Section 987 of the Code further provides that in case of the prosecution of a buyer or a seller, the burden of proving his bona fide intention to take or accept delivery of the goods is upon the accused. Apparently no buyer or seller has ever yet been called upon to prove that his particular transaction upon the grain exchange bore sufficient evidence of a bona fide intention to take or to give delivery, as the case might be, to satisfy a judge or a jury that the law had not been violated. Each such case would, of course, have to be decided upon its own merits, and it might be impossible to lay down a hard and fast rule as to what constitutes a bona fide intention. Nevertheless, we believe that the great majority of the farmers who invest the proceeds of their crop in the purchase of futures are in the same position, the one with the other, in so far as intention and expectation are concerned. Regarding the advantage or disadvantage of this form of speculation by farmers, the position seems at first sight to be that the farmer who sells his grain and buys a future with the proceeds—and later on re-sells this future—is not taking any greater risk than the farmer who keeps his grain in his granary, or the one who ships it to Fort William, and in either case waits to sell until the market price reaches his expectation. In each of these three cases the delay in selling may bring a loss or it may bring a gain. The future

price is usually so fixed as to take care of carrying charges, so that there is no saving on that score. The grain kept on the farm may suffer destruction or deterioration. Many other contingencies might be imagined which would affect the case one way or another. To put the matter briefly we believe that the farmer who holds the future is in no worse position than the other two. All three are subject to the danger of waiting too long, on account of ignorance or recklessness. But the evil to be apprehended appears to be that the practice of dealing in futures is much more likely to develop the gambling spirit than is that of dealing exclusively with one's own grain. We were told of farmers who by means of future trading risked to their sorrow not only the proceeds of their crop but monies realized from all other available sources. Risks of this kind when undertaken by inexpert speculators are usually accompanied by an unreasonable expectation that the market price will continue to rise indefinitely. Therefore they frequently result in disaster.

We refer to section 231 of the Criminal Code at some length because it has been brought to our attention on many occasions by some who claim that speculation by farmers is growing rapidly and is leading in many cases to great losses and that the facilities of the grain exchange make such speculations possible. In meeting this complaint we must first state, as we have already stated, that, so far as we know, nobody has ever yet been convicted of violating this provision of the Code upon the exchange, or of assisting or counselling any other person to do so. Nor, so far as we know, has the grain exchange ever been placed on trial before our courts or been charged, either in a criminal proceeding or a civil action, with being an institution which breaks the law by encouraging, or by permitting, the use of its facilities for illegal purposes of this kind. It happens, however, that this question in its wide and general scope was examined upon one occasion by the Supreme Court of the United States, under circumstances similar to those with which we are now dealing. (*Board of Trade of Chicago v. Christie*, 198, U.S.R. 236). We mean by this that no particular transaction was impeached in the litigation, but that the broad proposition was advanced, under circumstances which required the court to dispose of it, that the general business of the exchange was of an illegal character. The statute relied on as creating the illegality was a statute of the state of Illinois, expressly directed against "bucket shops or any other office or place wherein is conducted the pretended buying or selling of . . . grain . . . either on margins or otherwise, without any intention of receiving or paying for the property so bought or of delivering the property so sold, etc." The issue involved afforded the court the opportunity to discuss the practices and methods of the exchange at Chicago which, at that time appear to have been substantially the same as those which prevail in the Winnipeg Grain Exchange to-day. Futures were bought and sold and settlements made without the delivery of actual grain ever taking place. The contracts thus disposed of called for many times the total quantity of grain actually received in Chicago. A great many incompetent persons brought themselves to ruin by undertaking to speculate in their turn. The court held unanimously, the judgment being delivered by Mr. Justice Holmes, that these practices were not illegal practices, the sales not pretended sales and the exchange not a bucket shop or an institution of the character of a bucket shop.

The judgment points out (1) that, unlike the case of a bucket shop, the figures used in the transactions on the exchange are real market quotations representing prices and that they are consequently of great importance to the business world; (2) that the fact that the contracts involved call for a much greater quantity of grain than is actually received in Chicago is incidental to the practice of settlement by set-off and "is no more wonderful than the disproportion between the currency of the country and contracts for the payment

of money, many of which, in like manner are set off in clearing houses without anyone dreaming that they are not paid;" (3) that this system of trading, based on forecasts of the future, while of course speculative, is the necessary product of the present complex condition of society. The judgment admits that the success of the strong induces imitation by the weak who suffer loss by their adventures in future trading, but it asserts that this is not a sufficient reason to warrant interference with the system. On this point they express themselves as follows: "But Legislatures and Courts generally have recognized that the natural evolutions of a complex society are to be touched only with a very cautious hand, and that such coarse attempts at a remedy for the waste incident to every social function as a simple prohibition and laws to stop its being are harmful and vain."

We, likewise, would not recommend that the system of trading in grain now followed in this country and centred largely in the Winnipeg Grain Exchange, be abolished or hampered in an attempt to eliminate the "waste" which is to be found in the losses suffered by those who, without adequate knowledge and business experience, venture upon this field of speculation. We would, however, strongly urge farmers and others who are tempted to speculate on the grain exchange to beware of the dangers which confront them and which will very likely overcome them unless they possess the necessary education, information and general business ability to qualify as experts. And while we believe it would be unwise to overthrow the structure of trade in order to protect the weak, we do think that the law ought to do what reasonably can be done to make access to this dangerous field more difficult for the unwary. For instance, one person should not be allowed to solicit or induce another to enter into a speculative contract of this sort on or through the grain exchange. In making this suggestion we do not wish to be understood as meaning that the practice of soliciting this kind of business is now followed by any broker or other accredited member of the exchange. So far as our evidence shows this does not appear to be done. But in view of the growth of this practice of speculation among the western farmers it would be well, we think, to make things safe in this respect, for the future.

To revert finally to this Section 231 of the Criminal Code, it may be that in its present form it goes much further than did the Illinois statute which was under consideration by the Supreme Court of the United States in the case above cited. If it goes as far as some of the decisions in our own courts would appear to indicate, it may be made use of at any time to create considerable trouble for those engaged in future trading.

Coming now to the question of legislation designed to curb speculation in order to prevent undue fluctuations in prices and an unwarranted lowering of the price of grain to the producer, we find ourselves confronted with a problem upon which actual experience can throw very little, if any, light. Fluctuations, and sometimes violent fluctuations, in prices do occur on the exchange. Very often, and sometimes during long periods, the price offered for grain does not provide a reasonable return to the grain grower. Are these conditions caused or aggravated by uncurbed speculation, and can legislation be devised which will improve them by restricting such speculation? It would of course, be possible by Act of Parliament to abolish grain exchanges entirely. We have already said enough to show that, in our opinion, such a proceeding would be disastrous to all concerned and particularly to the owners of grain. Without going to this extreme length, legislation might be enacted to limit the activities of the exchange. Again we are of opinion that this should not be done unless the beneficial result aimed at can be fairly well foreseen. It is here that experience has so little to offer.

We have given our attention to legislation recently enacted in the United States and known as the "Capper-Tincher law", which became effective on

April 16, 1923. Its object was to restrict trading in grain futures and thereby to lessen fluctuations and to improve and stabilize prices. We do not think it necessary here to enter into a detailed examination of the provisions of this enactment because we cannot recommend its adoption, by the Parliament of Canada at the present time. Judging by a comparison of the conditions which have prevailed on the American Exchanges since the coming into force of this Act with those on the Winnipeg Grain Exchange we cannot find that its object has been attained. The opponents of the Capper-Tincher measure predicted that its enforcement would decrease trading to the injury of the market. Its promoters admitted that it would decrease trading but they asserted that this decrease would benefit the market. A decrease in trading has no doubt occurred. During the calendar year 1921, transactions in wheat futures on the Chicago Board of Trade amounted to 12,279,477,000 bushels, counting one side of each transaction. In 1922, the figures were 11,072,934,000 bushels. In 1923, during most of which year the Capper-Tincher law was effective, the total amounted to 8,572,111,000. We have no figures for 1924. We know, however, that the great slump in the total volume of trading on the Chicago Board of Trade indicated by the returns for 1923 continued until the Spring of 1924. Some attributed this slump to the Capper-Tincher law, others blamed economic conditions. When the prospects of the 1924 crop became known, trading increased rapidly in Chicago just as it did in Winnipeg, and during July and August the volume of trading reached proportions equal to any since the war. We have the opinion of one of the chief officials of the United States Department of Agriculture, given to us in October of this year, to the effect that it is as yet impossible to say whether or not the law has brought about an increase in the price of grain to the producer or a decrease in the price of bread to the consumer. In so far as fluctuations are concerned, we cannot see that any tangible result has been achieved towards lessening them. We have before us figures for each day during the months of August, September and October 1924 showing the high, low and closing prices for December wheat at Chicago, and Minneapolis and at Winnipeg. A study of the fluctuations of each day and between different dates show practically the same results in the United States as in Canada, while since the end of September the Winnipeg price has been uniformly higher than that prevailing in Chicago or Minneapolis.

We cannot therefore recommend the adoption in Canada at the present time of a measure modeled upon the Capper-Tincher law. The attempt made by the United States Congress to improve conditions in grain markets by means of this law is still in its experimental stage. This experiment will certainly be of benefit to us, and the fact that it is being conducted now will spare us the necessity of venturing upon one of our own. Those interested in the growing and marketing of grain in Canada and those responsible for our legislation will watch developments in the United States with a view to bringing home to ourselves any benefits that may be realized by the American experiment.

Apart altogether from the question of the value of legislation, we think it will be of interest to cite here a statement made by Mr. Julius H. Barnes, quoted in the "Chicago Journal of Commerce" of May 10th, 1924. Mr. Barnes is one of the leaders in the world's grain trade, and he enjoys in Canada as well as in the United States, a reputation which will allow no suspicion of his motives and no doubt of his ability to speak with accuracy on matters pertaining to the marketing of grain. Mr. Barnes was recently President of the United States Chambers of Commerce, and during the war he was head of the American Government's Grain Corporation. The statement which we cite was made by him at a time when grain exchanges in the United States had not yet emerged from the period of lessened activity to which we have referred. His statement, which follows, is a tribute to the benefits of future trading even when carried on under restricted legislation:—

"Trading in futures is the one thing which has kept prices up and the market steady. All wheat is traded on the basis of Chicago market prices and for seven months the trading on this market has held wheat from ten to thirty cents above the world market rate. The sole reason for this difference is because American future trading has held prices above the world level by investment and speculative dealing in futures."

Conclusions:

The conclusions drawn from this survey of futures trading and a future market are:—

(1) That a futures market permits hedging and that hedging by dividing and eliminating risks in price variations reduces the spread between the prices paid to the farmer for his product and those obtained for it upon the ultimate market.

(2) That hedging facilitates the extension of credit and thereby reduces the cost of handling grain by making it possible for grain dealers to operate on less capital than would be the case otherwise.

(3) That for the same reason hedging makes a larger degree of competition possible in the grain trade, on a given amount of capital.

(4) That hedging is of advantage to exporters so that even in instances where grain is handled under a pooling organization where the initial risk is carried by the farmer himself, in order to handle successfully the export trade such organizations find it desirable to make use of the futures market.

(5) That a competent speculative element in the market ensures a continuous and searching study of all the conditions of supply and demand affecting market prices.

(6) That speculative transactions tend to keep prices as between the contract grades and as between present cash prices and cash prices in the future in proper adjustment to each other and to future conditions of supply and demand.

(7) That prices thereby tend to be stabilized and fluctuations reduced.

(8) That a speculative element is necessary in an exchange to ensure a continuous market so that when a crop is dumped upon the market in the fall the farmer will not suffer loss by a heavy drop through absence of demand for immediate use.

(9) That individuals who engage in speculative transactions without adequate knowledge or capital not only usually close heavily but also are a disturbing element upon the market. Their transactions become mere gambling.

(10) That it does not seem possible to legislate effectively so as to eliminate such individuals without disturbing the general and genuine usefulness of the exchange; but that legislation should be directed towards preventing the incompetent from being lured into speculation.

(11) That Parliament should not at present enact restrictive legislation in the expectation of tempering fluctuations on the exchange, or of improving and stabilizing prices, but that time should first be taken to allow the new American law on this subject to demonstrate its efficacy.

(12) That the penalties and precautions against rigging the market, or dishonourable trading, seem calculated to make such practices rare and unprofitable.

Undue spreads in prices—

(3) That there is an undue spread between the prices on the Winnipeg Grain Exchange and those on the Liverpool Produce Exchange.

The gravamen of this charge is that, by some sort of manipulation, prices on the Winnipeg Grain Exchange are kept lower than they ought to be, with a corresponding loss to the farmer, and a gain to merchandising interests.

Currency was given to this idea by a report on the wheat situation made to the President of the United States by Henry C. Wallace, Secretary of Agriculture to the United States, transmitted to the President, November 30, 1923.

In this report, a comparison (page 99) is made of the prices per bushel of Fort William spot wheat, No. 1 Northern in Winnipeg, and the spot prices of the same grade in Liverpool. The prices are averaged for each month and the comparison extends from January, 1922, to September, 1923. The result makes it appear that over and above freight charges there was a margin between these two markets which was 6.5 cents per bushel for January, 1922, and for August, September and October of the same year was 15.4, 23.7 and 30.6 respectively. In June, 1922, the margin was .01 cent per bushel. Other months gave variations between the high and low figures given above.

We heard James A. Richardson, president and general manager of the James Richardson & Sons Limited, a very large exporter, who submitted that this comparison was unfair in that it failed to take into the reckoning "elevator charges at Fort William, elevator and brokerage charges at New York, ocean insurance, guaranteeing the outturn, brokerage charges to man at the other end." Mr. Richardson estimated that these charges would amount approximately to 5 cents a bushel so that the average profit on the basis of the comparison for the month of January, 1922, which showed a margin of $6\frac{1}{2}$ cents would really be about $1\frac{1}{2}$ cents a bushel, while in those months where the margin was below 5 cents the exporter would make a loss. Mr. Richardson pointed out that for the purpose of bringing the two sets of prices into comparison the freight rate for grain all rail from Port Arthur to New York was taken as the transportation cost but that actually only about 2 per cent of Canadian grain shipped through New York went from Port Arthur by the all-rail route.

In the months of September, October, and November, 1922, where the widest margin was shown, he said a railway strike in the United States had interfered with the transportation of grain to New York. The result was that exporters were unable to get their grain to the vessels and lost heavily through being in default in their deliveries at Liverpool. On the other hand English millers not receiving the grain they had contracted for at its due date bid up the price of what was available "spot" in Liverpool. The high price in Liverpool measured the degree to which the exporters were in default in their deliveries. We are satisfied that the Wallace Report touching this matter is inaccurate and misleading, and does not lend any support to the notion that prices are unduly depressed by manipulation on the Winnipeg market.

Commission on sales

(4) That the rule of a minimum commission charge on cash grain is too rigid and does not accommodate itself to variations in price.

The legality of this rule has been challenged and sustained. In *Gibbons v. Metcalf* (15. Man. R. 583) the by-law was upheld as both fair and just. This judgment was afterwards affirmed by the unanimous opinion of the Court of King's Bench of Manitoba in banc. The Commission rule also formed part of the material in the charge of conspiracy heard and dismissed in 1907 (*Rex v. Gage* 18. Man. R. 175). In this judgment, the learned Judge says in part:—

"In the strife to buy track wheat it was found members were employing agents at small points at what was practically a division of commission. It was felt that if this was not discontinued it would make such serious and unnecessary inroads on the commission returns as to prevent members doing business on the one cent margin. The commission by-law was then amended to prevent the members from employing a buying agent at a market which was too narrow to justify paying him a salary of \$50 a month. This resulted in a large number of agents being discontinued at the smaller points and secured a greater portion of the one cent a bushel to the members of the exchange. It did not, however, according to the unanimous evidence, in any way affect the price to the farmer. It did not increase to the slightest extent the profit of the dealer, except in so far as it cut expenses. It did not materially lessen the convenience of the local market to the producer. It was passed for the

supposed furtherance of the business of the exchange and without any intent to lessen, and in fact it did not lessen, the profits of any other than the employees of its members."

After tracing the origin of this rule and examining its effect on the trade and on the producer, the learned Judge concludes that "it would appear in the interest rather than to the detriment of the grain growers of our country that the intermediate profits between the grower and the exporters should be taken care of by a fixed, certain and reasonable commission."

The chief complaint raised at the present time against the commission charges is to the effect that by fixing the rate at so much per bushel the commission merchant is not interested in the price that his client obtains for his grain. It is argued that the rate should continue to be a fixed rate but that the basis should be the value of the grain sold rather than the physical quantity.

Cash grain is handled on a commission basis by the commission departments of the line elevator companies, by the Saskatchewan Co-operative Elevator Company, the United Grain Growers, the independent cash commission merchants and the cash brokers. As the cash brokers deal only with members of the exchange they need not here be considered. The cash commission merchants sell farmers' grain either by disposing of it on the exchange or by selling it to millers, private terminal companies or other grain dealers, if in the latter way they can obtain a premium over the current market price for their customers. The commission departments of the elevator companies carry on business in the same manner. They are in very sharp competition with the cash commission merchants.

The theory of a percentage charge as opposed to the specific charge is that when the price of grain falls the commission merchant should share in the diminution of the returns to the producer and the charge for his service should not be the same; secondly, that as the cost and hazard of handling high priced grain is greater than in the case of low priced grain more risk is involved and there should be a lesser charge made for low priced than for high priced grain.

With regard to such a change acting as an incentive to the commission merchant to give better service it is obvious that the necessity the commission merchant is under of meeting competition and of holding his customers is the strongest incentive that can be given. The fact that the commission rate is fixed, while it does away with price competition makes competition in service very keen since that is the only difference that competing commission dealers can offer over and above their fellows." The opinion expressed by dealers is unanimous that the slight difference in return that would accrue to the commission merchant by the commission rate being fixed on a percentage basis would not prove an additional incentive to good service.

The general notion that a percentage rate would make the commission merchant suffer in a year when there are low prices and the farmer suffers and vice-versa rests upon a misconception as to the main condition which determines the magnitude of the commission merchant's returns. The principal factor is the volume of grain the commission merchant handles. In so far however, as large volume and low prices and limited volume and high prices go together a percentage rate would tend to stabilize returns to the commission class as a whole better than a fixed specific rate. But what the individual merchant is interested in is the volume that he personally handles and this depends rather on his ability to render services to the customer in competition with others.

Moreover, the commission man performs certain services apart from selling the grain, and these services are attached to each car or parcel of grain whether it be of high value or low. From the time the commission man receives the bill of lading until the car is unloaded he follows it to destination, institutes inquiries, checks grades, appeals if necessary, etc. These services of themselves would appear to justify a minimum fixed charge. The main point is that the charge actually made shall be reasonable.

The rate fixed by the Winnipeg Grain Exchange of one cent per bushel for wheat remained unchanged during the period of high prices. Winnipeg is the only large exchange where no increase has taken place. The rate charged in the exchanges at Chicago and Kansas City is one per cent of the gross proceeds with a minimum charge of one cent per bushel. The minimum charge at Minneapolis and Duluth is one and one-half cents per bushel. It will be observed that the rate at Duluth and Minneapolis is 50 per cent higher than in Winnipeg, while at Chicago and Kansas City when wheat is below a dollar a bushel the rate is the same as at Winnipeg but if the price advances beyond a dollar the rate is higher. While the argument that the rate should be fixed on the percentage basis is attractive, the present specific rate fixed by the Winnipeg Grain Exchange does not appear to be excessive and it is very doubtful if a change would prove of any real benefit to the farmer.

It was recommended to us by Mr. F. W. Riddell, general manager of the Saskatchewan Co-operative Company, that the rate should be fixed by the Board of Grain Commissioners and that the rate fixed should be a maximum rate rather than a minimum rate. At the present time all commission merchants are bonded by the Board. The Board also sets the tariff of charges for country elevators and terminal elevators, etc. In view of both these circumstances it would appear to be sound procedure to place in the hands of this body the authority to set up a tariff of charges for the sale of cash grain on commission.

The suggestion that the rate fixed should be a maximum rate instead of as at present a minimum rate stands on a different ground. In general it is to be observed that where competition is keen a minimum rate tends in practice to become the maximum charged, where competition is sluggish a maximum set tends in practice to become the minimum charged. The minimum rate as fixed at present by the exchange was found desirable and necessary because under the stress of keen competition charges were reduced until they became so low that the business could not live and there was danger of erratic and unstable conditions, injurious alike to the dealer and to the farmer. Mr. Riddell was not prepared to go so far as to recommend that the Grain Exchange should not be allowed to enforce the minimum rate rule but was of the opinion that since it had not set minimum charges in other instances where the Board of Grain Commissioners had set maximum tariffs there was nothing to show that it would act in this situation. If the Board of Grain Commissioners merely fixed maximum charges and the Grain Exchange ceased to set a minimum charge the way would be open for a recurrence of the previous conditions that experience had shown to be undesirable.

Moreover, such a change would make it possible for large country elevator companies which have a commission department, to reduce commission charges for a time to such a figure as would practically eliminate the independent cash commission merchants who handle farmers' grain. It is doubtful if this would prove desirable in the long run at the present time the loading platforms at country shipping points and the independent cash commission merchants on the exchange give the farmer the advantage of a free access to the market as a competitive service to that offered by the country elevator companies. This is a privilege which in the past has been highly valued by the farmer. It is also a form of competition that is keenly felt by the country elevator companies, especially where a company such as the Saskatchewan Co-operative charges maximum rates for special binning privileges. Further there is evidence to show that when a farmer puts a carload of wheat through a country elevator, the company expects to act as his commission agent in Winnipeg. Difficulties are placed by the elevator company in the way of the farmer who desires to employ an independent commission merchant.

If it becomes possible, as the result of a maximum commission rate only being authorized for the large line companies, to squeeze the independent cash commission merchants out of country business by temporarily lowering rates, they would thereby not only reduce independent competition on the exchange but would ultimately do much to render nugatory the use of the loading platform which competes with their country houses. The net result in that event would be that the farmer would have lost his alternative and competing service. This competing service has its value particularly at shipping points where there is only one elevator. We are of the opinion, therefore, that while the Board of Grain Commissioners should have the authority to set the tariff of commission charges as the circumstances require it should be left at their discretion both as to whether the rate should be a fixed percentage of the value of the grain or a specific rate per bushel and as to whether the rate set should be a minimum rate or a maximum rate; and that in exercising this authority the Board should bear in mind the undesirability of creating conditions which would eliminate the independent commission merchant. It would follow, of course, that the Grain Exchange could not bind its members to a minimum rate higher than the maximum rate, if any, fixed by the Board.

The Exchange and the Inspection service.

(5) That the Winnipeg Grain Exchange exercise a sinister influence over the official grading of grain.

It is not the intention to deal here with the many general problems that arise in connection with a system of official grades and grading, nor to discuss the conditions under which grain is graded out of the terminal elevators at the head of the lakes. These problems are dealt with elsewhere. There are, however, prevalent in many places in the country rumours and suspicions that members of the exchange from time to time tamper with the official grading of farmers' grain. It is always difficult to trace a rumour to its source or to allay a suspicion that has once been given currency. In this instance we believe, after a very thorough and careful examination of the conditions under which farmers' grain is graded, that there is no ground whatever for these rumours and suspicions. Where the official sample drawn from a shipment shows it to be on the border line of, let us say No. 1 and No. 2 Northern, the rule holds, according to the evidence, of giving the grain the benefit of the doubt and grading it in the higher grade. Ownership does not enter into the question.

When the grain is inspected at Winnipeg the inspectors employed in the inside service of inspection, who place the grade upon the official sample, are not in a position to know who the owner of the shipment may be. Not a single instance of tampering with the officials of the inside service at Winnipeg by members of the Winnipeg Grain Exchange or by anyone else was disclosed.

Moreover if it were possible to tamper in any way with this service it would destroy confidence in the validity of the documents essential to the system of buying and selling by grade. Tampering with the official grading system while it would be unjust and injurious to the farmers shipping grain would be absolutely fatal to the organized activities of the exchange. In an inspection system confronted with the magnitude of the task that each autumn faces the inspection staff at Winnipeg certain inaccuracies and errors may develop due to the human element involved. Such possible errors and inaccuracies are altogether remote from results due to tampering with officials and their elimination is part of the general problem that arises in connection with the administration of an efficient system of grading.

MARKETS AND TRADE ROUTES

WORLD MARKETS FOR WHEAT

From time to time there has been discussion about the future development of world markets for grain. The subject is a vast one and is of great importance not only to the grain grower in Western Canada but to the world at large. The exportable surplus of grain from Canada has grown very rapidly in the last ten years, and, allowing for seasonal variations, with immigration, bids fair to continue to increase. The salient facts about markets may be briefly summarized. Nothing more can be attempted here.

Between 1900 and 1914 the rapid growth of population in Europe began to excite some alarm about where the means of subsistence were to be obtained. J. M. Keynes, in "*The Economic Consequences of the Peace*" points out that during this period the disquieting fact had become apparent to European statesmen that prices of grains were rising in relationship to other commodities. The Manufacturing nations of Europe were beginning to find that they had to offer larger quantities of merchandise to obtain foodstuffs. This was true despite the fact that Western European nations had improved greatly the technical methods of their agricultural production and were supplying themselves with a larger quantity of home grown produce. Still, population was increasing so rapidly that these technical advances in agriculture in Western Europe did not appreciably ease the situation.

The war caused a sharp positive check to populational increase but at the same time in Central Europe on account of the absence of fertilizers, culture, etc., production fell off. With this was to be added the effect of the revolution in Russia. Before the war Russia exported much grain to Great Britain and Western Europe. The immediate result of the war was to cut off this source of supply. Increased exports from North America, the Argentine and Australia filled in the deficiency.

From time to time there have been reports that Russia was "coming back" as a wheat exporter. While some small shipments have been made from Russia recently they have been without significance upon the market.

The present situation is that natural increase has repaired the losses of the war and the population of Europe is now about equal in numbers to the total of 1914. There is no evidence that Russia will make a speedy return to the position of a country exporting a large volume of grain. While the physical apparatus for moving grain in that country may be repaired with expedition there remains to be created a structure of confidence, of credit and of trading. Experience shows that injury to these more intangible elements in a country's system of marketing do not make rapid recovery but take a long time to renew efficiency.

While the United States continues to export grain and grain products the teeming population of that country seems bound, if not to remove her from the category of food exporting nations, at least to prevent her from increasing in amount her exports of grain or grain products.

The Oriental market also appears to be developing an increasing capacity to buy grain. It must be recognized, however, that there is a close relationship between the Chinese and Japanese demand for wheat and flour and fluctuations in the rice crop. When rice is relatively dear and wheat and wheat products relatively cheap there is a large demand for the latter and vice versa. This makes the situation irregular and uncertain.

On the whole it would appear that the Canadian grower of grain need feel no alarm about the stability of the world markets and its capacity to absorb all that he has to export. Seasonal variations some years may lead to disappointing returns but the general long run trend of prices for grains seem to be upward.

AN EXPORT DUTY ON WHEAT ENTERING THE UNITED STATES

At the present time, the duty on Canadian wheat—entering the United States—is 42 cents per bushel. On wheat flour, semolina, crushed or cracked wheat, and similar wheat products, the duty is \$1.04 per hundred pounds. These duties are practically prohibitive, in their effect. They prevent Canadian wheat or wheat products having access to the American domestic market. On the other hand, under the provisions governing milling in bond and drawbacks, it is quite possible for the American millers to obtain Canadian wheat virtually free of duty to grind for export. Considerable quantities of Canadian wheat are ground in American mills and exported abroad under these conditions. This American flour ground in American mills, but the product of Canadian wheat, enters into competition with the output of the Canadian flour mills. The benefits of manufacture are lost to Canada, while at the same time, the general benefits of reciprocal free trade in wheat and wheat flour do not exist. It was suggested to us that in view of these conditions, an export duty should be levied at the same rate as in the American tariff, upon Canadian wheat and wheat products entering the United States. The American tariff having already closed effectively the domestic market to the Canadian farmers, the result of such a levy would be to eliminate the export of American flour ground from Canadian wheat, and to transfer this market to the Canadian millers. While, as a general thing, export duties are to be deprecated, the exceptional situation that arises in this instance might warrant such an import.

THE EASTERN ROUTE

Canadian and American Ports.

While shipments of grain from Montreal make it the leading grain port of the North Atlantic it is well known that a large proportion of the grain shipped from there comes from the United States. On the other hand a large part of the Canadian export grain goes through the port of New York or other North Atlantic United States ports. There is a simple explanation to this apparently paradoxical situation. At all times grain will flow along the cheapest route to the old world entrepôts. It is very sensitive to variations in freight rates. The rates that must be considered are not merely the Atlantic freight and insurance rates but the total of rates from the Western terminals on the great lakes to the ports of entry on the other side of the Atlantic. When this is considered, a net difference of a sixpence a ton in favour of one route over the other will attract the traffic.

New York possesses three general advantages. (1) Vessels come to New York from all parts of Europe and there are frequent sailings to these points. There are certain regular lines of steamers between New York and European ports with which at Montreal there is no regular connection. Since grain is an excellent basic cargo space for parcel shipment from time to time offers at very low rates. There is thus a variety of opportunity for securing favourable ocean rates on parcel shipments that does not quite exist at Montreal. (2) Tramp steamers seeking charters lie off Norfolk where they are within convenient call of any of the North Atlantic American ports. A certain advantage attaches to this fact also. (3) On account of Montreal's position the insurance rate is higher on hulls and cargo out of Montreal than out of New York. The net result of these advantages is to give New York a slightly lower rate to Europe and the British Isles than Montreal.

On the other hand Montreal has two great advantages which counteract those stated above and, for a portion of the season at least, put her in a more favourable position. (1) Montreal is on the direct line to Europe from the Western States and while water navigation continues has the advantage of a

cheaper and more direct mode of transportation. (2) The facilities for handling grain at the port of Montreal are superior to those at the port of New York. At New York the grain has to be loaded into lighters and towed to the vessel's side and there elevated into the vessel by a floating elevator. At Montreal the grain can be discharged into the transfer houses and spouted from there directly into the holds of the vessel.

We are now in a position to point to certain conditions which govern the flow of grain during the course of the year to these ports. The American harvest matures several weeks earlier than the Canadian. As a result the advantages of the St. Lawrence route attracts heavy shipments from American lake terminals to Montreal. By the time the flow of Canadian grain begins to assume volume a large part of the American export of grain has been accomplished. On the other hand, on account of the lateness of the Canadian crop, the end of the grain shipping season is approaching on the St. Lawrence, before it does at the head of the lakes. This fact is of great significance as explaining partly why so much Canadian grain goes via New York and other American North Atlantic ports. When the flow of Canadian grain is still vigorous, navigation on the St. Lawrence ceases. Commonly it closes about two weeks earlier than navigation on the Great Lakes. Hence the flow of grain for this latter period is deflected towards Buffalo or the Georgian Bay or lower lake ports from whence it will move to tide water by rail. The end of the season finds these Bay, lower lake and Buffalo elevators filled with grain which will move out gradually during the winter. The grain carrying fleet on the great lakes takes a final cargo for winter storage and a large part of this fleet ties up at Buffalo for the winter. When spring comes, their grain is discharged and moves out chiefly via New York.

In the spring movement one additional factor is of importance. During the winter the Bay port and Buffalo elevators have become emptied of their stock in store. The first movement of grain down the lakes in the spring is to these ports as the most expeditious route to tide water. It will thus be seen that the explanation for a large movement of American grain through the port of Montreal and a large movement of Canadian grain through New York and other United States Atlantic ports rests chiefly on seasonal changes affecting the St. Lawrence route.

It might reasonably be inquired why there is not a considerable movement of grain from the Bay ports to St. John and Halifax. At present there is some movement in that direction, and at St. John this movement appears to be growing. The obstacles to a larger movement appear to be partly high freight rates and partly the absence of available cargo space offering at low rates at these seaports. As we have pointed out above, grain is an excellent basic cargo. As traffic grows at Halifax and St. John a large quantity of cargo space will offer regularly for the transport of grain. When this occurs more grain should move during the winter months through these ports. Lately Halifax has been put on the same insurance basis as New York. This removes one factor which has militated against her in the past.

The situation at Quebec is virtually that of Montreal, with the additional advantage of a longer season. There does not seem to be any reason why the Port of Quebec should not share with Montreal a part of the advantages of the St. Lawrence route. Montreal has developed wide business connections in the grain trade so that the traffic is accustomed to move through this port. It is open to Quebec to do the same thing; no physical obstacles lie in the way of the inauguration of an extensive grain export trade. Indeed, as the capacity of the Port of Montreal begins to be taxed at the peak of the movement, a part of the traffic might with advantage move to Quebec. Quebec also enjoys a more favourable insurance rate and is 180 miles nearer to Liverpool than is Montreal.

Freight Rates.

Upon several occasions we were asked to recommend that rates be granted on export grain over the Canadian National Railways to Montreal, Quebec, Halifax and St. John, sufficiently low to deflect to them the traffic which now goes by rail to the Atlantic ports of the United States. The object sought to be attained is undoubtedly a most worthy one: the preservation of Canadian trade for Canadian ports and the expenditure in Canada of a large amount of money which is now earned annually by United States railways. The subject forms an important part of a still larger question which has engaged the attention of Parliament in the past, and is still in the forefront of our national problems which await solution. In 1922, the Senate of Canada investigated the question of the export of Canadian grain and appointed a committee to examine expert witnesses on the subject. Evidence was given by railway officials, shippers, members of the grain trade and other business men. In its report the Committee emphasized the desirability of steps being taken in the national interest to divert this export grain traffic to Canadian ports, and recommended specifically (1) the lowering of rates on the Canadian National Railways, (2) the providing of greater elevator accommodation at Canadian ports, and (3) the making of an arrangement by the Government whereby marine insurance rates from Canadian ports might be lowered to meet the rates prevailing from United States ports.

During our sitting at Winnipeg, we had the advantage of hearing Mr. John E. Dalrymple, vice-president in charge of traffic of the Canadian National Railways, express his views on the question of the reduction of freight rates. Mr. Dalrymple's evidence was, of course, of a technical nature, and was given at considerable length. It is therefore difficult to summarize it fully in this report. It will be found, however, in the record of the evidence taken on March 7, 1924. Mr. Dalrymple's statement was prepared with great care, and it forms a valuable contribution to a study of the subject. The effect of this evidence is that the suggested reduction in rates on the Canadian National Railways is impracticable. Mr. Dalrymple was examined along the lines of the suggestion that export grain be carried from the Head of the Lakes to the Eastern Canadian ports on the basis of the Crowsnest Pass rates now effective on grain hauled from interior western points to the Lakes. His view on this question is (1) that such a reduction would be met by equivalent reductions on American lines, including the lines from the lower lake ports to the seaboard, which would leave Quebec (for instance), in the relative position it is in to-day. (2) Figuring out the Crowsnest rate basis to mean a rate of 15.60 cents per bushel on wheat from the Head of the Lakes to Quebec, he finds that the route via Buffalo to New York is still cheaper, even if no retaliatory reduction took place on the American lines, being 14.32 cents per bushel. (3) On the proposition placed before him by Commissioner Scott that the rate to Quebec on a proper computation of the Crowsnest basis would be 11 cents per bushel from Armstrong, he says that in his opinion the adoption of such a rate would surely bring about the aforesaid retaliatory reductions, and moreover that the revenues of the Canadian National Railways would be depleted, the proposed rate being totally inadequate to cover the expense of handling the traffic. As to the beneficial effect on the farmer of the general reduction of rates, "it would only be temporary," he says, "as the higher rates would be restored as soon as the Canadian National Railways were forced out of business."

Mr. W. P. Hinton, former vice president and general manager of the Grand Trunk Pacific Railway also gave valuable evidence on April 29, 1924 on the points involved. Mr. Hinton corroborated Mr. Dalrymple's evidence as to the impracticability of providing a lower rate on the Canadian National Railways during the period of open lake navigation on account of the certainty of

reprisals on competitive lines in the United States. He stated, however, regarding the winter months, that "there might be some possibility of drafting some rate structure which would allow the route to Halifax and St. John to be used during the winter season."

The question of railway rates in Canada is in itself a complicated problem of the first magnitude, and, as we have already said, the particular question now before us is only part of the general subject. In hearing such representations as were made to us regarding rates on grain, we have always endeavoured to make it clear that we should have to confine ourselves to such general considerations as would appeal to any body of men like ourselves not having the advantages of expert knowledge and expert assistance, and the necessary time to enter, unembarrassed by a mass of other important questions, into an exhaustive study of the numerous technical matters that must be weighed before a definite recommendation for a reduction of freight rates can be hazarded. In view of the evidence of Mr. Dalrymple, supported as it appears to be by the information which was obtained by us from important American railway officials in New York, we shall have to leave the subject as it is. The Board of Railway Commissioners for Canada is the permanent competent tribunal to which all demands for specific increases and decreases of freight rates may be made, and from which definite rulings may be obtained. In addition to this, we are aware of the fact that the whole structure of freight rates in Canada will probably be examined in the near future by the authority of Parliament, with a view to effecting a re-adjustment more satisfactory to Canadians of the different parts of Canada than the situation which now exists. We venture to state that in the course of our investigation we have heard enough to convince us of the urgent necessity of such a step being taken.

In making these last remarks, however, we do so subject to this important qualification. Mr. J. G. Scott of Quebec, one of the members of this Commission, is himself a railway expert of long experience, both as a railway builder and railway manager; and among other things he has the experience of having handled export grain from Parry Sound to Quebec. Mr. Scott gave evidence before the Senate Committee of 1922, above referred to. Mr. Scott, as a result of his own experience and expert knowledge, disagrees with the views expressed by Mr. Dalrymple. Moreover he has certain specific recommendations to make concerning the transportation of the western grain crop at a much lower rate than now prevails. While the other members of the Commission feel themselves bound by the limitation above referred to, they have requested Mr. Scott to state his own views in the form of a memorandum to be submitted to the Government with this report. Mr. Scott has prepared his memorandum, and we have pleasure in handing it in, in order that it may receive the attention of the Government and of Parliament.

THE WESTERN ROUTE

The development of the western route for grain export to the Orient through the increase of the demand for wheat from that part of the world, and to Europe through the opening of the Panama Canal, is an event of the first importance in the history of the Canadian grain trade. During our itinerary through the Province of Alberta in the summer of 1923 we found a steady demand from the farmers of that province for lower freight rates, greater storage accommodation and shipping facilities, improvements in the official inspection service and, generally, all other concessions and modifications which would enable them to make freer use of the western route. The availability of this route offers the producer nearer access to the sea, a factor of increasing importance in world transportation, and he is anxious, naturally, to take full advantage of it.

On the question of freight rates we can only repeat what we have said in dealing with the Eastern route. The matter, however, is of prime importance. The extent of the territory in the wheat producing area making use of Pacific ports for shipment will be determined very largely by the prevailing freight rate. It has been estimated that every reduction of one cent in the rate westward, (the rate eastward remaining as it is), will add a strip of from 20 to 30 miles in width to the area shipping to the Pacific.

Not the least of the advantages to be acquired by the providing of facilities for the free use of the western route, is that of regulating conditions in regard to shipments across the great lakes. The Pacific ports, open all year, and ready to receive shipments at any time, will serve to prevent the setting up of exorbitant rates for lake shipments and thus assist materially to dispose of a difficulty which has been encountered in the past.

The initiative in providing terminal elevator facilities on the Pacific coast was not taken by private capital, as was the case at the head of the lakes, but by the Government of Canada. The power to construct and own public terminal elevators was conferred upon the Government for the first time by Amendment to the Canada Grain Act, (Sec. 13) in 1914. Shortly afterwards the Government exercised this new power by constructing an elevator at Port Arthur, three in the interior and the public terminal at Vancouver in 1916. This Vancouver public terminal elevator has since become the property of the Vancouver Harbour Commissioners who have built another and acquired as well a private (mixing) elevator which they have leased to a company. Lately, private enterprise has gone into the public terminal business at Vancouver, on a large scale. An English company has built at that point, and has purchased in addition, a line of elevators in Alberta to ensure its grain supply. We understand also that other private ventures are about to be undertaken.

Victoria, New Westminster and Prince Rupert are all anxious to become grain shipping ports. So far, private capital has not been invested in public terminals at any of these ports. Parliament, at its last session, voted a sum of money to be expended upon the construction of an elevator at Prince Rupert and we understand that tenders are now being called for the letting of the contract. For the immediate present, Prince Rupert, as the terminus of the Grand Trunk Pacific Railway, and New Westminster, on account of its harbour facilities, both seem to afford reasonable prospects for terminal elevator development. Victoria, seems to us to be a matter for consideration of the railway companies. According to a statement made to us by the Premier of British Columbia, there is a certain class of trans-pacific steamships plying between Portland and Seattle and the Orient which visit Victoria but do not penetrate as far as Vancouver. It is suggested that these vessels would welcome grain cargoes if they could be had at Victoria. If such is the case it might be profitable to ferry cars across to Vancouver Island to be run down to the port, and this would mean in time the providing of elevator accommodation. We understand that the matter has lately been discussed between the British Columbia authorities and the President of the Canadian National Railways.

The Peace River District.

We think it necessary in dealing with the question of the Western Route to say a special word concerning the Peace River district. This territory is a wheat growing territory and contains a large area still to be developed. On account, however, of its situation, it is too far north and west to ship grain profitably through the East. Its future is bound up with the necessity of securing adequate railway facilities to give it access to the Pacific Coast.

THE HUDSON'S BAY ROUTE

In 1911 the Government of Canada began the construction of the Hudson's Bay Railway, to provide a new outlet for western products to the markets of Europe. It is not yet completed. In order to meet, in substantial part, at least, the cost of this undertaking, provision was made for the funding of the proceeds of the sale of pre-emption lands and homesteads, the property of the Crown, situated in Alberta and Saskatchewan. Today, while the producers of Alberta are mostly interested in the development of traffic to the Pacific, those of Manitoba and Saskatchewan are looking towards the Bay and demanding with great insistence that the railway project is completed, the terminal facilities provided and ocean carriage secured, in order that they may utilize this route for the shipment of their grain. The expectation is, of course, that this new channel of transportation will prove cheaper than those now available, and that the returns to the producers will thereby be increased.

Our understanding of the position of affairs in regard to this railway is that its completion is assured. From time to time during the course of our sessions we were asked to hear evidence advanced for and against the Hudson's Bay project. Bearing in mind the limitations which must necessarily be read into that portion of our Commission dealing with the subject of "transportation," we endeavoured to confine ourselves to hearing what might be said of the probability or improbability of the opening of the route being beneficial to the shipper of grain. The other features of the railway project are not of interest to this Commission. As a result we feel there is not very much we can say in this report, all of the evidence being founded on probabilities.

However, it would appear that the success of the route from the grain grower's standpoint depends largely upon a question as to which, curiously enough, there seems still to be a great difference of opinion, that is, the navigability of the straits during a reasonable period each year. It would be presumptuous of us, we think, with the inadequate means at our disposal, to offer any decided opinion on this all important point. The question has been the subject matter of investigation by Parliament and by the Government, and we must assume that satisfactory evidence of the navigation conditions has been secured, since the project has been launched and carried well on towards completion.

Assuming that the route through the Bay and the straits will be available during a sufficient period to enable large quantities of Western grain to be shipped by that outlet, use will be made of it for that purpose if it can be carried at ocean rates advantageous to the shipper. The standard of these rates will be affected materially by marine insurance charges, which, of course, increase according to the risks of the zone of navigation. Insurance rates at St. John are higher than those at United States Atlantic Ports, and those at Montreal and Quebec are higher than those at St. John. Will the ocean rates be so high as to offset the advantage derived from the short rail haul? Here we are left largely to conjecture, there being no such thing as a basis of insurance rates in the Hudson's straits today.

Experts, too, have pointed out to us the disadvantage of having to store grain at Nelson after the close of navigation. Grain in storage at that point would, of course, be off the open trade routes and consequently unavailable for marketing until the following season of navigation.

GOVERNMENT ELEVATORS

The question involved under this heading is that of the ownership, management and control of all elevators built at public expense, the property whereof is now vested in the Crown or has been transferred to some public body. We have before us a return supplied to us by the Department of Trade and Commerce, dated September 3, 1924, showing a list of these elevators and particulars of the ownership and management in each case. A copy of this list is given here for the purposes of information.

Location	Owner	Operated as	Operated by
Port Arthur, Ont. (1)....	Dominion Government.....	Public Terminal Elevator..	Board of Grain Commissioners.
Moose Jaw, Sask. (1)....	"	" "	" "
Saskatoon, Sask. (1)....	"	" "	" "
Calgary, Alta. (1)....	"	" "	" "
Edmonton, Alta. (1)....	"	" "	" "
Vancouver, B.C. (1)....	Vancouver Harbour Board.	" "	Vancouver Harbour Board.
Montreal, Que. (2)....	Montreal Harbour Commissioners.	Public Elevators.....	Montreal Harbour Commission.
Montreal, Que. (2)....	Grand Trunk Railway.....	Public Elevators.....	Montreal Warehousing Co.
Quebec, Que. (1)....	Quebec Harbour Commission	Public Elevator.....	Quebec Harbour Commission.
Collingwood, Ont. (1)....	Canadian National Railways	"	Leased to E. R. Bacon Grain Co.
Depot Harbour, Ont. (1)....	" "	"	Armour Grain Company.
Tiffin, Ont. (1)....	"	"	Canadian National Railways.
Port Colborne, Ont. (1)....	" "	"	Canadian Government.
Kingston, Ont.	"	"	Montreal Transportation Co. (not operated).
Halifax, N.S. (1)....	" "	"	Canadian National Railways.
St. John, N.B. (1)....	"	"	" "
Port Arthur, Ont. (1)....	" " "A"	Public Terminal Elevator..	Saskatchewan Co-operative Elevator Co. Ltd., No. 3.
Port Arthur, Ont. (1)....	" " "B"	" "	Pt. Arthur Elev. Co. Ltd.
Fort William, Ont.	"	"	Grand Trunk Pacific Elev. Co. Ltd.
Transcona, Man.	" "	" "	Not operated.

In the interim report of this Commission, dated at Vancouver on June 19, 1924, and filed by the Chairman and Commissioner MacGibbon, the question of the ownership, management and control of these elevators was dealt with at length, and the observations of the Commissioners will be found at pages 27 to 30 of the printed copy of the report. The recommendations contained in this interim report are now concurred in by the full commission. In effect it is recommended: (1) that the elevators referred to in the interim report should be acquired by the Government of Canada and vested directly in the Crown; (2) that they should be operated by a person or a body specially appointed for that purpose by the Government; (3) that the Board of Grain Commissioners should be relieved from the duty of operating and managing elevators, which is now placed upon them by section 13 (3) of the Canada Grain Act; and (4) that the person or body charged with the operation of Government elevators should be made subject in every particular to the requirements of the Canada Grain Act, and to the jurisdiction of the board as defined by that Act.

In making the foregoing recommendations, the report had particularly in view the public elevators situated at Vancouver, Port Arthur, Saskatoon, Moose Jaw, and Calgary, and the new elevator then in course of erection at Edmonton, and now completed. The first of these is now owned and operated by the Vancouver Harbour Commission. The others are owned by the Government and operated by the Board of Grain Commissioners under the provisions of the Act.

The reasons which support these recommendations are set out fully in the interim report, and need not be repeated here at any length. In so far as the Board of Grain Commissioners is concerned, however, we believe that the necessity of carrying out the recommendation which has been made will be found to be all the more urgent by reason of what we shall have to say later on regarding the question of the administration of the Canada Grain Act. It seems anomalous to us that the body which is vested with the great responsibility of licensing, regulating and disciplining elevator operators, fixing their charges and hearing complaints made against them, should itself be engaged in the elevator business, and therefore subject to the same criticism and the same complaints as are levelled from time to time against their competitors in the trade. Those unfamiliar with the grain trade will understand the situation better if we say that it is analogous to what would exist if the Board of Railway Commissioners were charged with the operation of a railway.

In addition to the elevators situated at the six points above mentioned, the list contains a number of others located at Atlantic and Lake and Bay ports. Eleven of these belong to the Canadian National Railways, of which six are leased to private companies; two are not operating, and the other three are operated by the Railway. Of the remainder, one elevator is given as owned by the Grand Trunk Railway at Montreal, and operated by the Montreal Warehousing Company; two are owned and operated by the Harbour Commissioners of Montreal, and one by the Harbour Commissioners of Quebec.

The elevators situated in Eastern Canada present a notable difference from those at the head of the Lakes, at interior points in the prairie provinces, and on the Pacific Coast. The elevators in the West are public terminal elevators, in the sense in which this term is commonly used. By this we mean that they receive grain which has been inspected officially, but from which the dockage has not been removed. They receive grain in carload lots directly from the producer. Their duty is to clean this grain, to account for the screenings, to store it subject to warehouse receipt, to preserve the identity of its grades. The producer feels a personal interest in the operation of these elevators, in which the grain remains his own until he has ordered it to be sold and has received his return. As a consequence, the producer is always watchful of the manner in which business is conducted at Fort William and Port Arthur, Vancouver, and the other Western points where his wheat is handled and stored until cold. He has a personal concern in the weighing-in, the inspection, the cleaning, the handling of the screenings, and especially in the manner in which the fundamental rule against mixing is being observed. Hence the occasional complaints against the operators of public terminal elevators and the demand for government ownership and control of these houses, which was heard very loudly at one time, and which led to the amendment to the Canadian Grain Act in 1914 (section 13), empowering the Government "to construct, acquire, lease or expropriate" elevators.

With the elevators in Eastern Canada, such as those situated at Montreal, Quebec, Halifax and St. John, the case is different. These elevators are transfer houses. The grain which they receive has been inspected and cleaned, and has secured its final certificate of grade on its way through the public terminals. Their duty is to store it according to grade, and to ship it out on demand. The grain passing through them has ceased to be the property of the producer, and he, of course, does not take the same interest in them that he does in the elevators of the West. In fact, the greater part of the Canadian grain shipped overseas from the East goes through New York, Philadelphia and other American ports, where the Canadian authorities can exercise no control in any event, and where the work of elevating and loading the grain into vessels is usually done by the Railways as part of their duty as carriers. The care to secure

proper warehousing conditions and efficient service at the eastern ports is therefore one that falls solely upon the exporter of grain, and not upon the producer. It will help to remove misunderstanding if it is remembered that in the mind of the producer Vancouver, for these reasons, occupies the same position as Fort William and Port Arthur, and is not in the position of Montreal or New York.

The foregoing explanation will throw some light on the question which arises as to whether those elevators in the above list handling western grain, but situated in eastern Canada, should also be brought under Government ownership and operation, in the manner recommended for those in the West.

During the course of our inquiry, the question appeared to be confined to the elevators in the West, in so far as the grain growers were concerned. Since the publication of the interim report, however, we have had cognizance of a communication addressed to the Minister of Trade and Commerce by the Executive Committee of the Canadian Council of Agriculture, approving of the recommendation made in the report, and suggesting that the elevators of the class operated at Montreal be included in the proposed change. The Canadian Council of Agriculture is undoubtedly qualified to speak for the producers of Canada; and while the individual grain grower has no proprietary interest in the grain handled in these elevators, it having become the property of the exporters, he is nevertheless interested in principle in everything that relates to the safe and efficient handling of the grain. This recommendation would mean that the elevators at Montreal, Quebec, etc., would be acquired by the Government and operated by a government appointee, and be subject in all particulars to the provisions of the Canada Grain Act and the jurisdiction of the Board of Grain Commissioners.

Bearing in mind the nature of the services performed by these transfer elevators, and the other conditions concerning them outlined above, we do not feel that the reasons which have moved us to recommend the adoption of the policy of government ownership and operation, in connection with the aforementioned western elevators, apply with the same force to them. The suggestion was not before us when we visited the Eastern ports, and we have had no opportunity to hear representations on the other side of the case from the public bodies concerned, and we would hesitate, therefore, to make a positive recommendation that this policy be put into effect concerning them. The interim report suggested that the principle of government ownership and operation which was recommended for the West might be extended to the East, the question being one for fuller discussion and consideration, and having in mind the importance of the matter involved, we do not feel justified in going any further now.

In so far, however, as these elevators at Eastern points are concerned, a middle course suggests itself. We have pointed out that it is the exporter of grain who is mainly interested in the management and operation of these elevators. We have had requests from some exporters to have the elevators at Montreal brought under the supervision of the Board of Grain Commissioners, principally in regard to the weighing and the consequent accounting for shortages.

On June 10, 1914, an Order in Council was passed upon the recommendation of the Minister of Trade and Commerce, conferring upon the Board control and supervision over the elevators of the Harbour Commissioners of Montreal, the Harbour Commissioners of Quebec, and the Government Railway at St. John and Halifax. Although duly passed, this Order in Council has never been acted upon, and the Board has never exercised the jurisdiction which it confers. We have been asked to recommend that it be made effective. The Montreal Corn Exchange Association placed itself on record, by letter

dated May 1, 1923, addressed to the Minister of Marine and Fisheries, as being in favour of having this Order in Council put in force. The letter states that this Association comprises in its membership all the Canadian grain exporters as well as the representatives in Montreal of United States exporters who ship via the St. Lawrence.

Apparently the main desire of the exporters is to have an independent body to whom recourse can be had in cases of disputes arising out of discrepancies in weights.

We are unable to state the reasons which have caused the Order in Council of 1914 to remain so far in abeyance. We believe that the vesting of the control of the weights into and out of these elevators in the body entrusted by Parliament with the administration of the Canada Grain Act, and the control of the grain trade of the country, would be a safeguard to exporters, and would have the effect of strengthening still further the confidence which is now felt in Europe in the integrity of grain cargoes shipped out of Canadian ports. We recommend, therefore, that steps be taken to bring about this result.

THE ADMINISTRATION OF THE ACT

The Canada Grain Act, 1912, created the Board of Grain Commissioners to administer the Act. Since 1912 the duties and responsibilities of this body have increased greatly with the expansion of grain growing in the West, the opening of new trade routes, and the growth in volume of exports. The importance of the proper exercise of its functions can scarcely be overestimated. It is of vital concern to Canada.

From time to time in our report we have suggested changes in the regulations which necessarily affect the duties of the Board of Grain Commissioners. We do not think these recommended changes call for additional powers to be given to the Board. The original grant appears to be ample. Indeed we have gone further in recommending that the actual operation of terminal elevators, as distinguished from control and supervision, should be divorced from the duties of the Board and given into other hands.

As a result of our investigation through the grain growing provinces we are strongly impressed with the necessity of the Board keeping in closer touch with the primary producers of grain. Small complaints and misunderstandings develop in the country relative to the handling of grain. They do not find a vent and are not cleaned up but fester and poison the neighbourhood where they occur. They create an attitude of suspicion and mistrust of the whole organization of grain merchandizing. At times when such complaints came to our notice we found that they involved matters that might have been disposed of summarily by the Board, but that the farmers concerned had an inadequate knowledge of the duties and powers of the Board and of the means of appealing to it. This does not imply any dereliction of duty on the part of the Board. They have no doubt given their best attention to whatever complaints have reached them. But they have not had the means to establish a close personal contact with the farmers.

The remedy for such a condition of affairs we consider does not lie in adding to the number of commissioners. We think that the Board should continue to be a judicial and administrative body, the members being selected purely on the basis of capacity rather than upon a regional basis. To allow regional considerations to decide appointments would, we believe, lead to an unwieldly Board and would militate against its efficiency.

We do strongly recommend that the Board should be supplied with sufficient expert technical and clerical assistance to enable it to accomplish its routine duties and at the same time to have opportunity to give a large part of its attention to its general functions of supervision, discipline and control over the grain trade.

The Board has the power to license elevators and to revoke licenses. We believe that there follows from this power the obligation to exercise some measure of inspection of the way in which the operators of elevators and other licensees deal with the grain producers. We have already stressed this point in regard to country elevators. *The Board should be an itinerant board* in the same way as the Board of Railway Commissioners, and should visit from time to time convenient points in the grain growing areas to hear complaints and to remedy grievances. We believe that if it acted in this way it would perform a very great service to the grain grower and to the grain trade in allaying discontent and creating conditions of confidence in this industry.

It is to be pointed out that the fees charged in connection with the administration of the Canada Grain Act after covering all expenses have yielded, in recent years, a large surplus. The Canada Grain Act is not designed to be an instrument of taxation but it is purely a regulative measure, the government having undertaken to render certain services and charge certain fees therefor. The fees levied for weighing, inspection, etc., are in themselves reasonable. We think that instead of lowering the fees to remove the element of taxation the surplus could be used to improve the service. Our recommendation that the Board of Grain Commissioners should not be cramped by lack of sufficient technical experts and clerical assistance bears in mind that the grain producers and the grain trade pay for these services and the present scale of charges provide the means to make it more efficient.

It was suggested to us that the efficiency of the inspection services particularly has suffered because the Chief Grain Inspector under the present system has to take all employees, including inspectors and samplers from the Civil Service Commission instead of being able to hire and dismiss these men as he did in former years. We do not recommend that this branch be taken out from under the Civil Service Commission but we think that care should be taken by the latter body to frame rules adapted to the particular exigencies of the grain trade. There is no doubt a need for much greater elasticity in the relations between the Civil Service Commission and the inspection and weighing departments.

At the present time the schedule of charges operative for different classes of elevators or other services are validated in various ways. Some are authorized only by the Board of Grain Commissioners, others require to be confirmed by Order in Council. We think that uniformity in practice in this regard should be established.

Finally we are of the opinion that the Annual Report published by the Board of Grain Commissioners should contain (1) an account of the activities of the Board itself during the year, (2) the detailed reports of its officers as at present, and (3) should show all orders in council in force supplementary to the Canada Grain Act.

All of which is respectfully submitted.

W. F. A. TURGEON,
Chairman.

W. J. RUTHERFORD,
J. G. SCOTT,
D. A. MACGIBBON,
Commissioners.

OTTAWA, January 7, 1925.

P.S.—In signing the above report, I do so subject to the reservations on the subject intituled "The Eastern Route," which will be found in my memorandum filed herewith.—J. G. SCOTT.

APPENDIX

REPORT OF INVESTIGATION MADE IN GREAT BRITAIN AND HOLLAND

At the request of the Royal Grain Inquiry Commission I went to the British Isles and Holland for the purpose of making inquiries respecting the receiving, handling, weighing, storing and transporting of Canadian grain in the Old Country; the markets—how Canadian grain is bought and sold, its intrinsic qualities in the milling economy; its intrinsic value and comparative value; impressions as to grade standards; buying on Canadian certificate final and f.a.q. (fair, average quality); public storage; complaints respecting the deterioration of Canadian grades while wheat is passing through the United States in bond; methods of purchasing grain from other countries, and anything else that might be helpful to the Commission and of value to the producers of grain and to the grain trade of Canada. I left Saskatoon May 15 and on my way east stopped off at Winnipeg and procured from the Grain Inspector's office average and standard samples of Manitoba Number One, Two and Three Northern, and Four, Five and Six Commercial, and special wheat, Number One and Two C.W. oats, Number Two and Three C.W. barley. At Montreal I discussed features of the grain trade with Mr. A. A. Bowen, Inspector for the Eastern Division, with special reference to cases of complaints by Old Country purchasers in which he had been employed in trying to make satisfactory settlements.

I arrived in Liverpool May 31 and proceeded to London. Here I called on Hon. P. C. Larkin, Canadian High Commissioner in London, and discussed with him the subject to our inquiry. He told me of the complaints that had come to his office from British traders in Canadian grains respecting shipments of Canadian wheat (Manitoba) through United States ports that were below the standard of quality which they expected to receive on Canadian Certificate final, and gave me access to the files in his office containing these complaints and the correspondence relating to them. He also gave me letters of introduction to men prominent in the grain and flour trade in London and Liverpool, all of which was helpful. I then called upon Mr. W. A. Wilson, Agricultural Products Representative for Canada, who introduced me to Mr. Harrison Watson, Chief Canadian Government Trade Commissioner in the United Kingdom. Mr. Watson gave me much helpful assistance. He arranged for me a meeting with several representatives of the large grain importing companies, who not only gave me valuable information themselves but who put me in touch with the people in the trade who could, and did, give the detailed information desired. Mr. Watson also wrote to the Canadian Trade Commissioners in Glasgow, Liverpool, Bristol, Rotterdam and Hamburg, pointing out to them the importance and the bearing of the inquiry, and indicating to them the manner in which they might make arrangements for me to meet the trade when I visited their points to secure evidence. He also wrote Mr. Urquhart, Secretary of the Liverpool Corn Trade Association, in respect to my visit there. As a result of Mr. Watson's help and that of his associates, excellent arrangements were made at every point in advance, so that full time could be given to matters pertaining to my mission.

I made my studies in London, Glasgow, Rotterdam, Edinburgh and Liverpool in the order named. More than seventy prominent men afforded me opportunities of discussing the various questions with them, and of seeing the

facilities they had for handling Canadian and other wheats from the ship throughout its devious course of unloading, weighing, transporting, storing, conditioning, grinding, testing and baking the flour into bread and testing the final product before putting it on the market. Among these were bakers, flour importers and merchants, expert wheat buyers, grain storage and transit companies; mill managers and millers, laboratory officials and expert bakers, elevator and dock superintendents, officials of Corn Trade Associations and representatives of wheat producing countries, such as India, Australia, and the editor and statistician of Broomhall's Corn Trade News. A list of those who assisted me is attached. I was fortunate in being in the Old Country at the time of the Empire Exhibition at Wembley. I visited it on three occasions, for the purpose of studying the agricultural exhibits of grain exporting countries within the Empire, chief of which, in addition to Canada, were Australia and India, and of discussing with the agricultural experts of these countries their problems of production and marketing. And I was fortunate, too, in being there just at the time when the United States Government issued what appeared at the time to be a bullish crop report, and to be able to follow at first hand its effects upon the various branches of the grain trade as it affected the old country and the wheat producing and exporting countries as reflected on the importing markets.

I wish here to record my appreciation for the unfailing courtesy with which I was received, and my many and pertinent questions were answered; for the valuable information given and suggestions offered, and for the many kindnesses extended to me both in the United Kingdom and Holland on the part of those who voluntarily assisted me.

The British Isles for two thousand years have grown wheat of varying quality and quantity, and at times have had surpluses for export. When England developed into a great pure bred live stock country, and suitable crop rotations became established, she still grew quite large acreages of wheat. Local mills had been established to grind the wheat and were dependent almost wholly upon local supplies for their requirements. The farmers naturally sought large returns from their fields, wheat for the mills and straw as a by-product for feed and for bedding for the stock. In securing these ends, the farmers lost sight of the needs of the miller to such an extent that in 1900 the National Association of Millers circularized the most prominent agricultural societies through the country, pointing out that since 1890 "the tendency in many parts of the country has been towards a further deterioration in the milling quality of home-grown wheat, and we attribute this to the fact that farmers and seed-raisers pay more attention to the large quantity of straw and wheat produced by some of the newer varieties, whilst overlooking the fact that some of these are singularly destitute of gluten, and of other characteristics which are of utmost value for milling purposes."

Since England has developed into a highly industrial and trading country, she has become dependent upon other lands for much of her bread supplies and for large amounts of stock foods—oats, barley, maize, beans, pease and oil-cakes. Her ships carry merchandise to the ports of the world, and, where grains are available, bring them back either as full or parcel cargo, e.g., England sends coal to the Argentine and brings back wheat and maize. The annual requirements, so far as wheat is concerned, to furnish bread for the people of the United Kingdom is approximately 270,000,000 bushels, of which, in 1922, 60,000,-000 bushels were produced by the farmers of the homeland. Of the balance, Canada furnished, in wheat and flour, 195,431,346 bushels, while the remainder came largely from Argentina and Australia, with contributions from United States, Chili, India, Egypt and Persia. Great Britain is Canada's best customer, not only for wheat, but for all other grains for which Canada has to find a market abroad.

The business of assembling the grain supplies for the United Kingdom is carried on by individuals or companies, commonly called importers. These may be simply middlemen who purchase from the exporter on C.I.F. terms, and resell to millers, standholders (merchants) etc., or they may be the large millers or groups of millers who purchase, or instruct their agents in distant markets to purchase from exporters wheat for their own mills. Brokers sometimes handle the exporters' wheat or other grains on a commission basis. British importers of grain have built up for their own service extensive office and field staffs and possess every known facility for acquiring information from the users of grain in their own and other countries, as to their approximate present and future requirements for a given period, and from wheat growing or grain growing countries as to acreages sown, weather and other conditions affecting crop growth, probable yields and quality, exportable surpluses, prices etc. Of necessity, large quantities of grain are purchased on contract for future delivery.

Importers and other dealers in grains have organized themselves into what are known as Corn Trade Associations. The London Corn Trade Association was the parent organization, founded in 1878, and incorporated under the chairmanship of Mr. John Ross in 1886. The first contract drawn up was the East Indian. Others quickly followed, and now number seventy-four. The sister organizations of Liverpool, Bristol, Hull etc., have a number of their own contracts, but generally speaking, the major portion of the world's grain business is done upon the basis of the London Corn Trade Association's contracts. The membership is international in character, including nearly 500 of the leading grain firms of the world, some of whom reside in New York, Buenos Aires, Melbourne, Winnipeg, Montreal and in every grain centre in the United Kingdom and the continent. Among the duties of the Association is the important one of taking samples of arriving shipments and that of making arbitration awards by its various committees in the interests of its members in the Kingdom and in other grain trading centres of the world.

In the eighteenth century, and previous to that time, the methods of trading in grain were primitive, awkward and cumbersome, and most inconvenient. For instance, in London the millers, grain merchants and farmers used to meet in Whitechapel, Mark Lane and Tower Hill Inns to transact their business. The farmers from both sides of the Thames formed the habit of meeting in Mark Lane to compare notes, and in time the idea of having a common meeting place where the interests of all three classes could be best served was evolved. In 1747, the corn factors or merchants subscribed enough capital to erect such a building where their business could be more expeditiously transacted, and this they called Mark Lane Exchange. From time to time the place was enlarged to accommodate the increasing trade. In 1882, the new Exchange was built. It has a large hall with 19,100 square feet of floor space. Round the hall there are 70 large stands with 20 small stands in the aisles, and round the clock in the centre of the market there are 8 more stands, while at the entrance there are 24 desk-stands. The market is held on three days of the week—Monday, Wednesday and Friday—from 12 noon to 3 p.m. It is free to all buyers, but sellers have to pay an annual subscription. On a market day, the floors of the exchange are crowded with busy men—importers, standholders (merchants), millers, feed merchants, representatives of farmers' co-operative societies etc. The business is carried on in a very quiet manner, in contrast with the methods employed on the floor of an exchange on this side the Atlantic. This is not a cargo market. It corresponds more nearly to, and in fact is, a retail market. The actual goods are not displayed, nor do the purchasers see, except in rare cases—stored grain or sample parcels—samples of the grains that are being retailed.

A standholder leases one of the stands for his use on market days. Arranged neatly on the stand are samples of all the various grades and kinds of grain

which he has for sale—not of the actual grain but of the grade or kind. The samples displayed were taken by a man, delegated to do that work, from the last arrival shipment, all of which has been sold and probably ground, or is in store in the bins of up-country mills. On one of these stands, I saw in bags, containing a few pounds each, samples of Canadian No. One, Two and Three Northern wheat from Atlantic ports, and No. One, Two, Three and Four wheat, via Vancouver, Australia (white wheat), Argentine—Rosafe and Barusso; Indian—Karachi wheat. In no case did the sample on the stand represent a parcel for sale. The sample represented a grade or a kind. If a sale were made, the contract specified the amount of the grade or kind selected. If the purchaser chose a load of No. One Northern via Vancouver, the purchaser expected to receive and the standholder expected to have delivered to him 8,000 bushels of No. One Northern equally as good as the sample, and up to the average of that which he was accustomed to receive on the Canadian Certificate final. The miller made careful comparisons between samples displayed on the same stand, and he also compared the samples on different stands, but even then he could not choose one which represented an actual parcel for sale except in the case of a sample cargo or stored wheat, and it was not my good fortune to see one of these on sale in this market. I asked the standholder if he knew the statutory definition of Manitoba Number One Northern. His answer was "No." He liked to trade on the Canadian Certificate final. It gave them the least trouble. I asked him if it would be an advantage in selling Canadian wheat if he could guarantee the miller a grade with say 14 per cent protein. "It would," he agreed, "be of advantage to the miller to have such information and more, if possible." He preferred to give the purchaser as little information as possible. "The miller likes to use his own judgment and I like to let him." On this market, the miller discriminates between Manitoba's via Vancouver and the same grades via Atlantic ports, Vancouver ones being 6d. and sometimes a shilling per quarter (8 bushels) more than Atlantic ones, and Vancouver fours being just about as much as Atlantic threes. This disparity in price and values had prevailed for some time.

There were on another stand samples of C. W. barley and C. W. oats. The standholder made no complaints so far as the quality delivered on the Canadian Certificate was concerned, but he pointed out the reasons why these grains would not bring prices equal to those from some other exporting countries. He was a manufacturer of pearl barley. He showed me the products made from our C. W. barley and from Danubian. That from C. W. contained too many bluish tinted grains, while that from the Danubian was white. C. W. oats had too many green kernels, and too much dirt. And these are the comparisons which the customer makes for himself during the trading hours on the Exchange. One miller objected to the frosted kernels which he found in a Number One Northern Wheat. After watching the millers and talking with a number of them on this market, I came to the conclusion that they know pretty well what they want for their purpose, and that they know what they expect to have delivered on a Canadian Certificate final via Atlantic ports, and via Vancouver. They pay more for Vancouvers and expect a better delivery. If, in making his selection of wheat, the miller finds the price of Manitobas "out of line" (higher in price), then he looks for a partial substitute which he may find in Rosafe or Russian. While Mark Lane Exchange is a market on which samples of grains are displayed, it is not a sample market as we understand the term on this side the Atlantic.

Only a few blocks away from Mark Lane is the Baltic Mercantile and Shipping Exchange. It, too, is a busy place, but trade of quite a different sort is carried on there. It is on the Baltic that most of the purchases of grain in cargo lots are made, and it is in one part of this market that is centered the world's trade in ocean vessel space. If an exporter, say at Vancouver, wishes

to purchase space for shipping to any part of the world, a cargo of wheat, lumber or other commodity, his order is eventually passed through this clearing house. The membership of this organization is large and includes much of the membership of the London Corn Trade Association as their interests are so largely identical.

There is no futures market in London. The importer explained that he protects himself when buying, say Manitobas, by selling Plate or Australian or any wheat which he may have in an advantageous position at the time. He pointed out the importer's job was a hazardous one financially always, but especially so since the war, owing to the fluctuations in rates of exchange, ocean freights, and unsettled work and trade conditions generally. "Several companies have lost fortunes and some failed completely. Competition is extremely keen. The margin of profit on which the business is carried on is very small, approximately $\frac{3}{16}$ of a cent a bushel. Success depends upon the volume of business and elimination of risks."

The markets in other cities, such as Liverpool, Glasgow, etc., are comparable to Mark Lane, except that in addition Liverpool has a "futures market" which is conducted in a room adjoining the spot-market. The futures market was established for the purpose of enabling the trader in grain commodities to hedge his purchases and sales; to act as a barometer of world values of grains; to help to establish a parity of values and to stabilize prices. In addition to the legitimate use of such a market, there is a purely speculative element that attaches to it, and here, as elsewhere, the gambler comes to grief sooner or later. Liverpool has the only futures market in the United Kingdom and is the only one of its kind in Europe at the present time. The prices ruling on the Liverpool market are cabled daily to all the great grain trading centres of the world and the state of other markets are received daily by Liverpool.

Owing to the fact that Liverpool has a futures market, there is always kept in store varying quantities of wheat deliverable on the contract. The average amount so kept would be about 1,000,000 bushels, while it might at times be as high as 5,000,000 bushels. A good Number Two Northern delivered on the contract will usually bring a small premium to the seller, while a good Three will give a like premium possibly a little better to the buyer. I saw here a sample of Canadian hard spring wheat that had been tendered on the contract and refused on account of the high percentage of wild oats it contained. The storage company had cleaned up a sample for re-tendering. The cleaned sample looked like a good Three Northern, and it was expected that it would be accepted. This was a sample cargo, and the oats so extracted would probably be displayed as Canadian sample oats. It should be noted then that the importer broker who simply buys and sells wheat is interested primarily in securing a large volume of trade. His capital is turned over quickly. He is satisfied with a small margin of profit per unit, but must handle a large number of bushels in order to maintain his service. Quality of product is of interest to him mainly in securing and holding customers, and in this connection, of course, uniformity of product counts for much. The importer generally is highly satisfied with the Canadian system of grain marketing, grading and the Canadian Certificate final. He buys usually almost entirely on C.I.F. (cost, insurance and freight) terms. The grain is delivered in the hold of a vessel at the dock of the port to which it has been consigned. Technically speaking, the freight includes lifting the grain from the hold and placing it at the rail on the deck of the vessel, which is known as Master Stevedoring. The stevedore is the servant of the ship owner. The consignee purchases the grain from the exporter at a certain price, say 51s. per quarter (8 bushels), and sells it to a purchaser at a certain number of shillings per cental (100 pounds) in Liverpool. The selling price takes into account the C.I.F. price plus interest, insurance, bank charges, risks and profits. The importer has no delays when handling Mani-

tobas on Canadian Certificate final; no arbitrations and few complaints of a serious nature, except on shipments that have been deteriorated by mixing or substitution while passing through United States territory in bond. Now and then a shipment is too dirty from both Vancouver and Atlantic ports. The banks like the Canadian system on account of the facility with which the business can be done. The dispatch with which the transactions can be carried on is apparently a strong factor in making the Canadian system so satisfactory to those who have to do with getting Canadian grains into the Old Country markets.

Now and again an exporter, for reasons known best to himself, consigns to an importer (broker) a shipment of wheat with the American Seaboard Inspection Certificate. This certificate states that the grain covered by it is of "Manitoba origin." Shipments on American Seaboard Certificates do not tend to improve the situation for Manitobas on Canadian Certificate. Not many experienced buyers are deceived by it, but new customers would be disappointed, for, from those who have had experience with this kind of shipment, the reports are unfavourable, and the results unsatisfactory. And then there are sample cargoes. An exporter thinks he can do better by sending a sample ahead of his shipment, with a guarantee to deliver a consignment as good as the sample. He quotes a price, and probably in the end accepts an offer. Not much business is done according to this method. Most importers find it much easier to do business with the standholder and miller on the Canadian Certificate final. One large miller told me of a recent experience he had along this line. It was anything but satisfactory. He still had the wheat in store and did not know what to do with it. He said, "I thought I was getting a bargain and I got just what I paid for."

So far as the importer merchant is concerned, then, he can sell any kind or grade of wheat at a price. For example, if Number One Northern export wheat were reduced in weight, colour, variety, hardness, soundness, cleanliness to the minimum of the grade, 60 pounds to the measured bushel, 60 per cent of hard Red Fife or Marquis wheat, he could sell it after a time, when the buyers had become accustomed to it, at a price just as he sells Number One Northern now, but the price would be reduced relatively in consequence of the reduction in quality of the grade. And if this grade were kept uniform, confidence would in time be re-established, and the prices offered would be in keeping with the quality, and according to the degree of confidence of the trade in the new standards. But this would do an injury to our producers as I shall point out further on.

Millers.

The millers of the United Kingdom are divided into two main groups—the port and the inland—and these are again arranged in economic groups according to locality—Liverpool, Manchester, Hull, Bristol, London, Glasgow, Edinburgh, Midlands, etc., for purposes of mutual benefit that may accrue through united effort, research, education and economic policies. The port mills are at the dock side as in Liverpool, London, etc., or they may be located at convenient distances from the dock as in Glasgow and Edinburgh. The inland mills are in many instances situated on small streams and on the canals. A number of the larger millers or groups of millers import their Canadian wheat, or very large quantities of it, directly, or through their agents located in New York, Montreal, Winnipeg and Vancouver. One of the large millers' associations on the continent employs one agency to purchase and import all the wheat its various members require during a period of five years, so satisfied are they with this method of assembling their supplies. The smaller millers, located inland, are able at most times to procure supplies of wheat from the farmers of the district. This source is not constant in quantity, nor is it

uniform in quality. The seasons vary and it follows that the wheats do likewise. English wheats have undergone marked improvement during the last twenty years, due to the research work carried on in this connection at Cambridge and Rothamsted. But the inland millers must still have Manitobas or other strong wheats to blend with the softer home grown, in order to produce a brand of flour that will suit the needs of the baker.

At the time of my visit, the inland miller had to seek most of his supplies from abroad. The competition of poultry raisers for home wheats for chicken feed having put them, for the time being, completely "out of line." This new competitor may, for a time at least, make the lot of the inland miller a hard one, as it was his nearness to the source of supply of raw materials, together with good home markets for offals that enabled him to compete successfully with the larger port millers more advantageously situated for obtaining the raw materials from abroad.

The British and Irish Millers Association is an organization comprising a large membership, upwards of 1,400. Its chief function is to further the interests of its members and to improve the industry, both from a technical and economic standpoint. It was a committee of this association that, a few years ago, called the attention of the home farmers and seed growers to the deteriorated quality of the wheats they were raising, and interested the research stations in the work of improvement. And it is this association now that has promoted the idea of a research laboratory in connection with the milling industry, and has raised funds for procuring a mill, for equipping a laboratory, for engaging a director of research and staff, and secured grants from the government to aid the work. Until just recently, this organization provided the facilities for instructing the apprentices in the science and practice of milling and mill management.

Transportation of Canadian Grain.

Wheat and other grains of Canadian origin are carried to the ports of the Old Country in both full and parcel cargoes that have been taken on at the various Canadian ports of Montreal, Quebec, St. John, Halifax and Vancouver, and at United States ports, Portland, Boston, New York, Baltimore, Philadelphia, Hampton Roads and Newport. Tramp steamers are ordered to these ports, and when they have been properly cleaned, fitted and inspected are loaded with bulk grain and safely packed with bagged grain on top to keep the bulk from shifting in rough seas. The hatches are then closed and tightly caulked to prevent water entering the holds from the deck, proper papers and certificates covering the wheat are given the captain, and the boat is released to sail for Liverpool, London, Rotterdam, Marseilles or whatever its destination may be. Sometimes these tramps or "grain liners" sail, not knowing where they are going to discharge, until they receive final orders from some European port of call or wireless station. And then there are the big ocean liners that ply regularly between Canada and the United States and the Old Country. Wheat makes an excellent basic cargo—ballast. It is easily taken on and easily discharged. Ocean freights, rates of insurance on both hull and cargo, position of grain and time to arrive determine in a large measure how grain shall move—by full or parcel cargo—and from what ports it shall move. A fraction of a cent may, and very likely will, change its course.

How Grain is Discharged.

The large liner landing at, say Liverpool, after its passengers are unloaded, moves to its own dock and there puts off its cargo other than grains. Floating elevators equipped with the most modern pneumatic suction and bucket conveyors move up beside the vessel and at the same time discharge the grain in

huge conical piles on the quay in long sheds provided for the purpose; overside into small coasting vessels for delivery to coast mills, and into barges for mills inland, or into wagons, motor vans or railway trucks. The tramp, or "grain liner" is usually provided with a special place for berthing where its cargo of grain is emptied directly into mill silos or into barges, coasting vessels, etc., or it may be into a public storage silo, if it is a wheat tenderable on the Liverpool futures contract. The writer visited the ports of London, Liverpool, Glasgow and Rotterdam, and saw Canadian wheat, oats and barley being unloaded, and lying in heaps in the sheds on the quays, saw the grain being weighed by automatic weighers and by the antiquated system of manhandlers; saw it being loaded into vans and barges and saw it being put into public storage in Liverpool for future delivery.

The ports visited are all well equipped for handling the grains from the ocean carriers. The Liverpool Grain Storage and Transit Company Ltd., is typical. It has made most complete arrangements for discharging vessels and for weighing and reloading; for storing, cleaning, cooling and drying grain; for bagging and reshipment of grain; in bulk or in bags by barge, motor or railway truck or coasting vessel. This company has the most modern facilities for the conduct of its business in the way of silos (4,640,000 bushels capacity) with deep water berths at the Alexandra and Brunswick docks; floating elevators with bucket and pneumatic unloading and loading equipment; automatic weighers; barges, coasters and lighters; motor and railway vans; and a complete set of tracks connecting its silos with the large railways to facilitate and expedite the transhipment of grain for inland destination.

The charges for the various services rendered by the Liverpool Grain Storage and Transit Co. Ltd., are as follows:—

RATES EX SHIP IN BULK

	Wheat or maize in bulk		Barley, rye or peas in bulk		Oats in bulk		Railway haulage
	2,240 lbs.	100 lbs.	2,240 lbs.	100 lbs.	2,240 lbs.	100 lbs.	2,240 lbs.
No. 1 Quay Rate—							
Receiving ex ship in bulk, barging, discharging from barge, weighing, housing and delivering (or weighing over) including sack ties, including three days free rent from average date of housing.....	s. d. 3 0	s. d. 0 1·6	s. d. 3 6·75	s. d. 0 1·9	s. d. 4 2	s. d. 0 2·23	s. d. 0 9
	cents 72·9	cents 3·21	cents 86·6	cents 3·5	cents 101·27	cents 4·54	cents 18·2
No. 2 Quay Rate—							
Receiving ex ship in bulk, barging, discharging from barge, weighing, housing and delivering (or weighing over) including sack ties, including six days free rent from average date of housing.....	s. d. 3 6·75	s. d. 0 1·9	s. d. 4 3·25	s. d. 0 2·25	s. d. 4 11	s. d. 0 2·63	s. d. 0 9
	cents 86·6	cents 3·5	cents 103·8	cents 4·55	cents 119·5	cents 5·07	cents 18·2
Warehousing Rates—							
Receiving ex ship in bulk, barging, discharging from barge, weighing, housing and delivering (or weighing over) including sack ties.....	s. d. 4 2	s. d. 0 2·23	s. d. 5 0	s. d. 0 2·67	s. d. 5 9	s. d. 0 3·08	s. d. 0 9
	cents 101·2	cents 4·54	cents 121·5	cents 5·09	cents 139·7	cents 7·69	cents 18·2

NOTE.—Pound Sterling taken at Normal (\$4.86 $\frac{2}{3}$).

RATES FOR GRAIN CARGOES AT DEEPWATER BERTHS, ALEXANDRA AND BRUNSWICK DOCKS, INCLUDING MASTER STEVEDORING AND MASTER PORTERAGE

	Wheat or maize in bulk		Barley, rye or peas in bulk		Oats in bulk		Railway haulage
	2,240 lbs.	100 lbs.	2,240 lbs.	100 lbs.	2,240 lbs.	100 lbs.	2,240 lbs.
Receiving in bulk, weighing, housing and delivering (or weighing over) including sack ties.....	s. d. 3 0 cents 72.9	s. d. 0 1.6 cents 3.21	s. d. 4 0 cents 97.2	s. d. 0 2.14 cents 4.05	s. d. 5 0 cents 121.5	s. d. 0 2.67 cents 5.09	s. d. 0 9 cents 18.2

The above does not include stevedoring charges.

RATES FOR OTHER SERVICES

	per 2,240 lbs.		
	s.	d.	cents
Weighing over, and restowing (wheat or maize).....	0	10	20.2
Weighing over, and restowing (oats).....	1	2	28.3
Delivering ex store (goods having been weighed over) (wheat or maize).....	0	10	20.2
Delivering ex store (goods having been weighed over) (oats).....	1	2	28.3
Use of separator.....	0	8	16.2
Use of cooler (Alexandra silo).....	0	8	16.2
Turning by band, wheat, maize or oats.....	0	4	8.1
Use of electric fan.....	0	6.5	13.2
Sampling over bands, per silo.....	2	6	60.7
Drawing samples, including bag, and delivering at merchant's office in the city.....	5	0	121.5
Sewing sacks, including cost of twine.....	0	1	2.02
Sewing sacks, merchant's twine.....	0.5	1.01	
Ascertaining and certifying natural weight per Imperial bushel.....	6	6	158.0
Ascertaining moisture content of grain by Duval Moisture Tester.....	2	6	60.7

NOTE.—Pound Sterling taken at normal (\$4.86 $\frac{2}{3}$).

Any extra work (such as turning by hand labour, weighing over screenings, chaff, etc., or otherwise not included in the foregoing rates, are charged for according to labour and materials expended, plus) establishment charges.

Hess Drier.

The company have installed at the Cobourg Granary a Hess Drier, capable of drying or cooling 95 tons of grain per hour.

The machine can be so operated as to extract moisture, say from $\frac{1}{4}$ per cent (minimum) up to 25 per cent maximum.

The company's rates are:—

For cooling only.....	9d. (18.2 cents) per 2,240 lbs.
For drying with hot air, including extraction of moisture.....	9d. (18.2 cents) per 2,240 lbs. per cent of moisture extracted.

NOTE.—Pound Sterling taken at normal (\$4.86 $\frac{2}{3}$).

Warrants.

The company, under its charter obtained in 1885, is authorized to issue certificates and warrants to consignees. A charge for making out warrants, if more than one is required for each parcel (exclusive of Government stamp), each 3d. (6.7 cents).

Extra charges are incurred in case the grain is moved on the company's railway tracks from its storage silos to the railway company's depot, where regular rail haulage begins. This company takes no responsibility for the condition of the grain. Each parcel is stored by itself, and the owner must assume the responsibility for knowing himself as to the condition of the grain. He obtains from the company permission to inspect the surface of the bins, and if he suspects that everything is not right, he must give directions to the company as to what he wishes done in order to know definitely its conditions and in case

it requires moving, cooling, drying, etc., specific instructions must be given by him in respect to what service or services he wishes the company to perform. All charges must be paid before the grain can be ordered out of the company's storehouse.

It will be seen from a study of the foregoing, in respect to storing or handling wheat or other grain in a port like Liverpool, that every time the grain is touched an extra charge is put upon it, and, in addition, if stored, there are the accumulating interest and insurance costs, and in some cases depreciation from the effects of heating, weevils, etc.

The Mersey Docks and Harbour Board have facilities of a like character for discharging grain cargoes, transferring, storing, etc.

At London, the port authority has a complete monopoly of the unloading facilities and of storage, (except that owned by port-side mills), and of the berthing docks and the land along the river on either side. Practically all of the wheat unloaded at the port of London is into dock-side mills and barges and coasting vessels that carry it by canal to the mills up country and to those at or near the sea coast. Storage is provided on either side of the Thames, but is seldom used for wheat.

Glasgow's port is under the control of the Clyde Navigation Corporation. I visited this port, accompanied by the Superintendent of Clyde Docks and the Traffic Superintendent of Clyde Elevators. The Canadian Pacific liner *Marloch* was discharging 40,000 bushels of No. One Northern wheat at the rate of 50 tons per hour in a huge pile inside the shed on the quay. In the same sheds there were great heaps of No. 2 C.W. oats and No. 3 C.W. barley, and sample wheat. This system of discharging the grain in loose piles in open sheds, where it would appear comparatively easy to have mixtures occur, not only of grades but of varieties of grains, gives no trouble, nor causes any uneasiness to the purchaser. The wheat being unloaded was for the Scottish Co-operative Wholesale Society, one of the largest users of Canadian wheat in Scotland. It has experienced no troubles arising out of this method of handling the grain. Other millers gave evidence to the same effect.

The wheat was being conveyed to the mills by motor vans, into which it was being weighed and loaded, some in bags and some in bulk. There were two systems of weighing and loading in operation that day on the same quay. The first was the old method of man handling. Five men constitute a squad. They use a bucket-shaped like a half barrel, and a beam balanced at 120 pounds. Two men fill the bucket from the pile, and hand it to two who hang it on the end of the balance beam. They brush off, or add, enough wheat to make it balance evenly (there was no "break of the beam" in evidence) and the two empty it into a sack held by the fifth man, who ties and places it on the truck or van. Two buckets (240 pound) made a bole. One gang of man handlers load about 800 boles per day. In the same shed, an automatic weigher and loader was at work. It elevates, weighs in drafts of 240 pounds each, and bags or loads in bulk as required, at the rate of 60 tons per hour per double machine.

The port of Glasgow has in addition the Meadowside Granaries with silo capacity of 20,000 tons and two sheds of 5,000 tons capacity each, where cargoes are discharged. The largest bins hold 275 and the smallest 28 tons each. These granaries are equipped with both bucket and pneumatic lifters. The buckets have a capacity of 80 tons and the pneumatic 90 tons per hour each.

Rotterdam, near the mouth of the Rhine, possesses a very fine harbour, and is the receiving port not only for Holland, but for western Germany as well. The flour mills of Mannheim and Strasburg obtain their supplies of wheat through this port. Grain is carried here as to other ports in both parcel and cargo lots. The large ocean liners have their own berthing places, while the full cargoes tie up for unloading in what is known as the Maas harbour, and discharge through unloading silos. Up to 1904, all unloading in Rotterdam was

done by hand by what are known in England as master stevedores and master porters. In that year, two floating elevators were introduced. At the present time, the Grain Elevator Company of Rotterdam has 13 floating elevators with a discharge capacity of 250 tons per hour each; the Mutual 13, and the Furniss Company two. The Grain Elevator Company guarantees the vessel owner a discharge of 3,000 tons per day, failing this it pays demurrage, a thing which the company claims it has never had to do. The charges at this port are very similar to those made in Liverpool for the same services. Ninety-five per cent of the grain imports at Rotterdam are transhipped by vessel or barge, while at the port of Antwerp fifty per cent goes by cars.

The weighing of grain at Rotterdam is all done automatically. All outturn weights are guaranteed by a company called the Internationale Controle, and no serious complaints as to shortages were reported.

I saw here a cargo of rye from Russia being unloaded by one of the company's floating elevators. The grain was very dirty, and on account of this and the contract under which Russian grain is sold at the present time, a number of men were employed sampling the grain in the interests of both the seller and buyer for arbitration purposes. Russia's system of marketing her grain is in marked contrast to that of Canada's. Those in charge of unloading expressed high appreciation of the Canadian grading and grain marketing system, and the facility with which shipments of Canadian grain are cleared. When grain arrives in the port of Rotterdam on the f.a.q. contract or a modification of it, as in the case of Russia, the interests of the seller and of the receiver of the grain are protected by the Central Grain Factory, which is an organization composed of 60 grain factors. This body looks after the sampling, cleaning to grade, making arbitrations and adjustments, taking up of papers, and the interests of importers generally. In 1913, grains to the amount of 5,100,000 tons were handled at Rotterdam for Holland and Germany, and only 2,600,000 in 1923. Holland's grain imports have increased, but Germany's have decreased.

The system of receiving, weighing, discharging and caring for Canadian grain in the different ports is good. A few antiquated methods are still in vogue, but these affect only the people concerned, and do not affect the quality of the grains handled. On the whole, the work is done expeditiously, and costs are kept down by competition. At no port were there any recent complaints as to outturn weights—all being within one-half of one per cent.

Storage for grain in importing countries

There are four forms of storage provided for wheat and other grains in the United Kingdom and Holland, where this question was studied. They are—first, sheds and flat warehouses on the quays; second, bins and silos that form a part of the milling plants; third, public flat warehouses and silos owned by port authorities and private companies; and, fourth, in barges and vessels. Of the first, little need be said, for storage on the quays in sheds and flat warehouses is almost entirely of a temporary nature, while the grain is passing from the ship to the mill. It is there long enough to be weighed and loaded. The place must be cleared quickly to make room for the next ship's cargo. In some cases, however, where the owner is not ready to accept it, or where a shipment awaits an arbitration award, the grain may remain in this form of storage for a longer time. The second form—silos and bins forming a part of the milling plants, are as necessary as the mill itself. The mill must be kept going—there must be constant supplies—and to ensure this, there must be ample storage, not for one grade or one variety, but for many grades and many varieties. The writer was unable to arrive at even an approximate estimate of the mill storage for wheat in the United Kingdom, but was able to secure definite information in this respect as to the storage at some of the large mills. One company,

whose annual grinding capacity is 3,200,000 to 3,600,000 bushels, had storage for 360,000 bushels. On the day of my visit, the stores contained the following wheats, all in separate bins: Canadian, One, Two and Three Northern; Plates (Argentine) Barusso and Rosafe; United States No. Two soft red winter and hard red winter; Indian, Karachi. In two of the silos, there were 70 bins of about 2,400 bushels each, while the third had less. The manager explained that he could not take any chances on being short of any of the wheats which he must have at his command for making certain grades of flour with which his trade was familiar.

Under present conditions, wheat passes as directly as possible and with the minimum of handling from the hold of the ship to the storehouse of the miller. Intermediate costs must be kept down. The amount of wheat in the mill store is known only to the miller himself, and this knowledge enables him to make his purchases with greater freedom, and with less likelihood of being put at a disadvantage, or of being embarrassed in case of temporary fluctuations in prices.

The third form—publicly owned silos and flat warehouses—have been erected after most modern plans for intake, weighing, cleaning, cooling, drying, sampling, storing and discharging. They are located most conveniently at ocean ports. All the ports visited were amply furnished with this form of storage.

There is, all told, in the United Kingdom approximately 32,000,000 bushels public storage space for grain of all kinds. There is always a small amount of grain stored, but the problem facing the owners is to get sufficient grain to defray interest charges on the capital invested in the stores. Grain unsold will of necessity pass into public store, where costs of one kind and another accumulate. The buying trade know of its presence, and are likely to let the owner hold it till he must make an offer. Importers, as has been explained, make their purchases of Canadian grain almost entirely on c.i.f. terms and sell before arrival if possible, in order to escape not only the cumulation charges of public storage—interest, exchange and price fluctuations—but also the awkwardness of the situation of having grain at a fixed place, where, because of its position, it can be available, at a price, to only a small area and to only a fraction of the users of such grains. This question of public storage was discussed with importers, and with millers in the various centres, and with storage owners and directors in Liverpool, Glasgow and Rotterdam, and with Col. Stevens, representing the Trafford Estates, Manchester. In ordinary times, wheat should move as directly as possible from the producer on the farm to the consumer (miller) in the importing country. Canadian wheat, moving from farm to the seaboard is not easily diverted from its course. It follows the course of least resistance—low handling charges, low freight and insurance charges, etc. The least barrier will turn it into another channel. It will not stand even the slight extra charge of going into an interior terminal at Saskatoon unless forced by embargo. And so it is in the importing country. The same economic laws govern. Suppose an importer should take 100,000 bushels of wheat from a vessel and deliver it into public store on the south side of the Thames. It would be done either because it was unsold or because he intended speculating on it for a higher price in the future. In either case, the storage charges and the handling in and out are very high, about 10 cents per bushel, and added to this are interest and other carrying charges. When eventually he is ready to sell, he is limited so far as purchasers are concerned to those tributary to the storage south of the Thames. The place to store grain, in the best interests of the producer under present conditions, is at convenient ports in America (Canada and the United States) where it can be sold and shipped via various competing ports to the highest bidder in any part of the world.

It was argued in the United Kingdom by some that, from the standpoint of safeguarding the national food stores in time of war, the nation itself should undertake the responsibility of providing storage for the nation's supply of bread stuffs. Whether this is done or not is a matter of internal economy for the consideration of the British taxpayer. It was also argued that it would be to the advantage of the Canadian producer to have large stores of wheat in England ready at hand to supply the miller with such quantities and at such times as he needed it. It should be borne in mind that wheat of various kinds and qualities are arriving in the United Kingdom just as it is required throughout the year from countries that have it for exchange. The mill owners have this wheat in store at their own mills in sufficient quantities to tide them over long periods. Liverpool on account of its futures markets must hold a certain amount of wheat in store—on the average about 1,000,000 bushels, sometimes as much as 5,000,000 bushels. When discussing this question with one of the London millers, he said that, owing to the futures market in Liverpool and to the storage of grain there to meet the contracts, the millers in that area had access to the "cheapest wheat in the Kingdom."

Public storage at the ports is approximately as follows:—

	Bushels
London Port Authority..	4,750,000
Liverpool, Mersey Docks and Harbour Board..	2,220,000
Transit and Storage Company..	8,000,000
Hull..	1,500,000
Manchester..	3,000,000
Bristol..	4,800,000
Glasgow..	1,250,000
Dublin..	500,000

Storage at Rotterdam.

Grain silos (elevators) for storage purposes were erected by three different companies; 10,000 tons capacity in 1900; 15,000 tons in 1908; and 20,000 tons in 1910. These are nearly always empty. Wheat is almost never stored at this port. Feed stuffs are stored in varying quantities. Corn from Argentina was being stored on the day of my visit to the harbour. The importers had been unable to sell it, and so had to place it in store. It is cheaper to store in elevators than in barges, unless for a very short time or when barges are moving towards destination. In chartering for Rhine barges, different rates are quoted according as the charterer wishes the barge "to lie" or "to sail." It was pointed out that neither importers, consignors or consignees with wheat in public store on the eastern side of the Atlantic would be in a very enviable position. Their market would be too limited, and they would be at the mercy of the consumers and the storage owners. "Only those who get caught with unsold corn use our storage."

Canadian wheat.

Canada has three quite different types of wheat which she exports. One is the hard red spring wheat grown on the prairies from the Red River valley in Manitoba to the foothills of the Rockies; another is the hard, yellow, flinty, brittle spring wheat commonly called Durum or goose wheat, and a third the soft red and white winter wheats of Ontario and the provinces east. The first, in its highest standard is a hard, red, plump, glutinous berry noted for medium moisture content, and for its high protein and what is termed "strength," when manufactured into flour. It is classified into various grades based upon trueness to type, colour, soundness, weight per measured bushel, cleanliness, moisture content, for the purpose of facilitating the marketing and merchandising of the crop. The Old Country miller knows the grades from experience, and uses them for grinding into flour either by themselves or in combination with one or more other wheats. It is used to impart "strength" to the flour in either case, for

bread-making purposes. Yield of flour (indicated in part by weight per measured bushel and appearance of bran or wheat covering) is also a factor affecting the value of Canadian hard spring wheat.

The Durums are used for making semolina for macaroni manufacture.

The winters are used alone or in combinations for making soft flours—lacking in strength—for household purposes for making scones, cakes and pastry, and for blending with strong flours for bread-making. They are exported now in the form of flour.

Bread-making in Great Britain and Holland.

In order to understand better certain important features in connection with the merchandising of Canada's wheat—especially Manitobas—one must know something of the systems of bread-making that are in vogue in the importing countries. The habits and customs of the baker, the tastes of the people, together with the laws governing labour determine largely what the system shall be. The features characteristic of a good loaf are pretty much the same, though there are details in which they differ, but the methods employed in arriving at the loaf are very different, and must be understood in order to appreciate fully why the Old Country bakers, flour merchants and millers play such an important part in determining Canada's system of grading and marketing her wheat.

The characteristic features of a good loaf of bread—one that will satisfy the customer and enable the baker to meet competition—are (1) volume—length and height with perfect shape, uneven bulking being a sure sign of uneven qualities of gluten; (2) colour—whiteness of crumb with bloom; (3) porosity—the texture of the loaf should be uniform throughout, and relieve the closeness; (4) texture—it should be firm and not too solid. Crumbiness indicates deteriorated gluten or excess of gliadin; (5) elasticity—it should retain or regain its shape under pressure and be relatively light; (6) crust—this must be of a reddish brown tint or clear yellowish red. It must not be of an opaque or leathery texture nor flake off; (7) flavour—it should be sweet to smell and taste. Strongest aroma given off just when loaf is fresh from the oven. Should masticate crisply. This latter quality is a good indication of successful wheat blending.

In Scotland, the baker arrives at this loaf by quite a different system from that employed by the bakers of England and Holland. On the evening preceding the baking, he sets a sponge—a mixture of flour and water in the proportion of about 10 to 12 pounds of flour to a gallon of water and adds to this a little over an ounce of yeast and a little salt, and sets at a temperature of about 72 degrees Fahrenheit to allow the process of fermentation to go on. When this has proceeded sufficiently, he mixes in flour to make a dough, using about as much as he used before. This time, instead of all strong flour, he uses part strong and part soft. This is set to rise again, and lastly he mixes in another portion of soft white or coloury flour. This was described as the "quartern" process. From the time of setting, until the loaf is out of the oven, the time required is from 12 to 16 hours. In order that this method may be successfully carried out, the flour for the sponge must be one that is characterized as "strong," which means that it must carry a high per cent of gluten of the right quality in order that during the process of fermentation the gases may be caught and held so as to produce the desired effects when the loaf is baked.

In a baking test in the west of Scotland just before my visit, the first prize loaf was one baked wholly of flour made from Canadian hard spring wheat.

In England, the prevailing system is what is known as the "short method." The time consumed from the setting to the finished loaf is four hours or less. The success of this method depends entirely upon the quality of the gluten. The fermentation process is carried on rapidly, and the gluten must possess a quality that was described as "distensibility." It was pointed out in England that quantity of gluten in a flour was not so important with their system as

“quality” of gluten. In Holland, again, owing to labour laws and other causes, the short system is used entirely, and here again emphasis was laid upon the quality of gluten. “Holland has better bread than she used to have,” was the evidence given, and consequently requires a higher grade flour.

The bloom and colour of the loaf is obtained from the flour. Strong flours from hard spring wheats do not give this bloom and creamy whiteness which the Old Country bakers are desirous of producing for their customers. The softer wheats of Australia, the Pacific states, Chili, English and Scotch wheats produce flours with these desired qualities, and these are used by the baker to give this characteristic to his loaf. And high flavour is obtained by the use of flours made from home-grown wheats.

But the baker cannot be satisfied with the production of a satisfactory loaf only. He must be able to produce from the sack of flour (280 pounds) at least 94 to 96 four-pound loaves of bread. The flour he uses must possess what he terms “absorption.” It must be able to take up and hold additional moisture. This is one of the principal characteristics of “strong” gluten.

Flours from Canadian and Other Wheats.

The wheat berry or kernel consists of an embryo or baby plant, which occupies a small part in the lower end of the grain, and a much larger part known as the endosperm (starchy part). The whole is surrounded by a many-layered covering. In the process of milling, the wheat berries are conditioned, tempered, etc., and rolled and crushed and sifted or bolted so that in the end important commercial products are obtained. Among these are flour and offal. The flour usually represents about 70 per cent of the total weight of the wheat, though this will vary with different kinds of wheat, and according to the weight per measured bushel. It will also vary according as the miller wishes to take a high or low extraction.

Flour, the finished product, consists largely of carbohydrate substances, of which starch is the most important, and proteins. An average or a typical result from the analysis of a great number of flours has been given as follows:—

	Per Cent
Carbohydrates.....	72.92
Protein.....	13.31
Fat.....	1.22
Ash.....	0.39
Water.....	12.16

But analysis of the flour is not sufficient for the baker. He has learned from long experience to look for certain physical properties which are of great importance to him, and to test in a very practical way for the hidden but all important property of “strength” and “quality of strength” which is wrapped up in some obscure manner in what is known as the gluten. The gluten is of a gluey nature, and its elasticity enables it under the pressure of the gas formed in the fermentation of the dough to form the many vesicles which, when fixed under the influence of heat, give the familiar honey-combed appearance to the crumb of bread. While the quantity of gluten in a flour is important to the baker, it is the quality of the gluten that interests him most, for if its stability and elasticity are poor, the baking qualities of the flour are poor in proportion.

The baker has for his own purpose classified flour under two heads—strong and soft or weak. If a flour will make a loaf that will stand up, keep its shape, without cracking, falling over or running flat, and has good absorption, it is termed “strong.” If, on the other hand, the loaf does not stand up, and falls or cracks or runs, the flour is called “soft” or weak. The strong flours are indispensable for bread making, and the soft are equally as important for scones, biscuits, crackers and pastry. The chemist has not as yet worked out a satisfactory method for discovering by chemical reaction the “quality” of the gluten.

When talking this matter over with the head of one of the large baking companies in Glasgow, I asked him what he looked for in a good flour for bread-making. His answer was: "We want first, colour—a creamy whiteness without bleaching. Bleaching destroys the bloom. Second, strength—high gluten content with that quality that we describe as distensibility. It will stretch and not break or crack. High absorption—I want it to take up water, and I want my bread to 'keep,' not get stale quickly. Third, bloom—silky appearance and touch." To illustrate this characteristic, he called my attention to a loaf made from Hungarian flour, of which he had a small quantity, and with which he was highly pleased. Fourth, flavour and aroma—free from bad odours—nutty when baked. Fifth, starch—fine quality, not easily described, but easily detected, and again he referred to the Hungarian flour loaf. Sixth, moisture content low. "I want to add the moisture. And," he added, "it is very important that the deliveries of the same brand of flour be uniform." He then proceeded to show me his method of testing flours. He had a number in the laboratory set for testing, so it was of interest to know that some were of Canadian flours—one from Boissevain, one from Strathroy, and one from London, Ont., one of which proved not good—the gluten was "too brittle."

His method was as follows: "Weigh out 3 ounces of flour and thoroughly mix with 30 drachms of water into a dough, and allow to stand for a few hours, perhaps over night in a warm temperature (about 72° F.). Two people make the final test. The hands are rubbed in flour and then shaken so that excess flour is removed. The lump of dough is flattened out until it resembles a scone. The two operators take hold of opposite sides and pull gently while one manipulates it underneath with his fingers until it looks like a thin creamy-coloured piece of toy balloon rubber. In this way, the stretch of the gluten is tested. If it breaks easily or tears, it is judged not good, and is so noted in a book of records kept for reference. Not only are single flours tested, but also various blends which the baker himself makes.

The tests made in the laboratory are recorded in the following manner:—
Physical test of flour—

	Per Cent
Absorption..	54.8
Gluten wet..	40.0
Gluten dry..	13.4
Moisture..	12.0
Ash..	0.43
Fat..	1.25

This indicates fairly well what he may expect from the flour. These tests and similar ones are applied not only by bakers, but also by flour importers, flour merchants and by the millers themselves, for the interests of these four are all identical. The baker must be suited and all have to cater to him, except under conditions such as existed during the war when he had to take what was allotted to him and make the best of it.

Fifty per cent of the flour used in Scotland is imported. Canada and Australia get a fair share of this trade. Canada's is substantial, and Australia's would be larger if her supplies were more constant. I was told in Glasgow that it was the flour made from the strong hard spring wheats imported many years ago that necessitated the change in the milling system, and created the place for them in the milling economy of Scotland. An experienced baker in Glasgow said to me, "Flour made from your One Northern wheat is our 'trump card.' It has strength and on account of that constitutes the base in our system of breadmaking. We insist upon having flour made from No. 1, because that grade is supposed to be made from sound wheat—no frosted, no bleached or sprouted kernels. When we get flour made from frosted, bleached or sprouted wheat, it does not work right, and the results would be very bad if we let it get into our

bakeshop. Our experience has taught us that we must test every flour in order to ensure a uniform product and prevent losses to our business." "Australian flour," he said, "does not possess the strength suitable for the Scottish system of breadmaking, but it is valuable on account of its superior creamy white colour, and for its bloom. We use it in the doughing stage to impart these qualities to our bread." This flour is increasing its hold upon the Scottish market and would, because of its uniformity, displace other soft flours, if supplies could be relied upon uniformly throughout the year. The limited amount of this flour and the demands for it at times in South Africa and the Orient are factors that affect the quantities imported into Scotland. It would supplant United States soft flours as at present in this market.

"United States flours are of such a varied character and have changed so much of recent years that their imports into the United Kingdom are falling off. Flours made from the hard spring wheats are required for home consumption and so are those from the hard winters. The soft flours from the Pacific coast wheats have lost favour owing to a lowering of quality due to mixtures of wheats grown by the farmers themselves and because of too many varieties of different qualities being grown in the area from which the mills draw their supplies or by a process of indiscriminate blending or mixing which has led to a deteriorated brand of flour that lacks dependability on the part of bakers and householders who are large users of soft flours for scones, pastry, etc." "Hungarian flour is a very superior article, but we cannot get it now in sufficient quantities."

The following figures indicate the trend of the import flour trade of the United Kingdom, so far as Canada, the United States and Australia are concerned:—

FLOUR IMPORTED INTO THE UNITED KINGDOM

—	Canada	United States	Australia
	bbl.	bbl.	bbl.
1921.....	3,314,285	4,514,285	742,857
1922.....	3,714,285	2,571,428	971,428
1923.....	3,142,857	2,171,428	971,428

It will be noted that in 1922 Canada took first place and maintained that position in 1923, so far as volume is concerned. The United States by 1923 had fallen off in her volume by over fifty per cent, Canada about six per cent, while Australia had increased hers by twenty-nine per cent. Canadian flour imports through United States ports are credited to the United States, so that the volume of Canadian flour appears much less than it really is. Scotland takes the larger portion of Canada's to satisfy her breadmaking system, and owing to the insistent demand of the Scottish bakers for the best strong Canadian flour, the millers of Scotland, in order to hold their fair share of the flour trade in competition with the flour importers, are forced to grind in large measure No. One Northern wheat. As Canadian flour manufactured from No. 1 Northern wheat is the "trump card" of the Scottish baker, so Canada's No. 1 Northern wheat is the trump card of the Scottish miller. He grinds breadmaking flours almost wholly from one kind of wheat, "strong" flours from One, Two and Three Northern, Mediums from Plates and United States winters, and soft from Australian and Pacific. Some millers use Manitobas as a base, and introduce smaller proportions of other wheats of a like character, according as quality and price are consistent with quality of product. But when it comes to making soft flours, he does much blending of wheats and produces a brand of flour that perhaps a few years ago was made from a single type such as Walla Walla, a Pacific coast wheat. Owing to crop failures and to the changes in quality of products from certain areas, he has been forced to adapt his processes to meet the new conditions.

In England, the practice is different. Breadmaking flours are made very largely from blends of three or more wheats. In one instance, the miller explained that the blend he was grinding the day of my visit consisted of One and Three Northern, Australian,—Baril and Rosafe; Pacific hard, Russian, White Karachi and Chilian in varying proportions to suit price and maintain quality. Thirty per cent of the flour from this run went into the top, and seventy per cent into a lower grade, with about a seventy per cent reduction. In another, only three wheats were being ground with a sixty-five per cent reduction to make a certain high grade flour for a special trade.

In England, the breadmaking flours must possess strength, but in talking of strength, it is "quality" of the gluten that is held to be of greater importance than "high" gluten content. Strength is secured from the inclusion of Manitobas in the blend, but if Manitobas are too high in price—"out of line"—a substitute can be had in Rosafe from the River Plate or from Russian, if it happens to be available. What I wish to make clear is that Scotland, owing to her system of breadmaking is insistent in her demands for flour made from high grade Canadian, while England, owing to her system, demands a flour that may be derived from the blending of a variety of wheats with a strong wheat as a base to give strength. What is true of England is also true of Holland.

Canadian Flour

Imported strong flours from Canada enter into sharp competition with that produced in the Scottish mills. It will be seen that the Scottish miller has to be very cautious in the matter of quality of wheat, price, etc., selection of grades, handling and milling in order that he may secure both quality and yield of product to meet this competition—the home market. He has an advantage in that he has his by-products—the offals, bran, shorts and middlings—that usually bring a good price. Low ocean freights may give flour from certain other countries an advantage as in the case of the United States. At one time, Hungarian flour, because of its superior qualities already referred to, was considered the Scottish baker's "trump card". It was supplanted by Minneapolis flour made from what was known as Duluth wheat and St. Louis flour made from hard red winter, and these in turn have given way to Canadian. Quality and price are the determining factors as to the brand or brands of flour that the baker will use, bearing in mind always that the quality of the loaf and the required number of loaves from the sack must be maintained.

Offals

In the process of milling, a complete separation is made between the flour and the coatings and germ. The latter are called the offals and are divided according to physical properties into broad bran or sharps and pollards or shorts. These constitute about 30 per cent of the total grain milled, the proportion of bran to pollards varying according to the kind, variety, grade and condition of wheat from which it is a residue. They are used extensively as supplementary feeds for the various kinds of stock raised in the United Kingdom and Ireland. Dairy cows and beef cows in milk, young cattle and horses are all large consumers of bran, while the pollards are fed to pigs as well as to other classes of stock. Bran is a condiment of a laxative nature. It has greater intrinsic value as a food when the milling process has been less perfect and more starchy particles have been left adhering to the coatings. Very efficient mills, when flour is dear and offals are cheap make a high reduction—70 per cent and over according to the kind of wheat they are grinding—while when the reverse is the case they would make a reduction of 65 to 75 per cent. The offals would vary in quantity and quality accordingly.

Wheats are of three distinct colours—red, noted for strength, white for colour, and yellow for brittleness. When reds and white are milled separately,

the bran from each is known as red bran and white bran respectively, and in certain markets these are valued quite differently. It is the Irish farmer who discriminates in this way between red and white bran. In his judgment, white bran (the residue from white wheat) is better for his stock, and he backs up his judgment by offering more and paying more for it—sometimes 20, 30 and 40 shillings per ton (2,240 pounds). The Scottish, English and Irish millers know of this discriminating judgment of the Irish farmer, and in order to be able to furnish his requirements they compete with each other for the limited supplies of white wheats—Australians, Karachi, Chilian, White Bombay and Walla Walla. These white wheats are comparatively scarce and their arrivals in the United Kingdom are irregular. The flours produced from them are soft and have their own particular uses—especially Australians for colour and bloom. Frequently these wheats sell at a higher price f.a.q. than Canada's on Canadian Certificate final, owing to the fact that the miller can make more money out of them. Reds are usually more plentiful, and while the total offal is about the same as from the white wheat, the broad bran from the reds is approximately 50 per cent less. The Australian millers have an excellent home market for their bran, owing to the well developed dairy and stock industry, and so are able to quote comparatively low rates on flour to importing countries. The importers of Canadian in the Old Country are anxious that Canadian exporters of flour should devise some method of packing offals so that these could be economically and safely shipped to them along with flour. This, they think, would enable them to secure a larger flour trade and would enable them the better to meet the competition of the home miller, who, on account of his good markets for by-products, is able to keep the price of flour down.

Wheat Designations—Manitoba, Karachi, Rosafe, Duluth, etc.

Wheats are known on the markets of the world by some distinctive name, and as each wheat imparts some one or more fairly marked characteristics to the flour derived from it, the name very soon becomes associated with these qualities. The consumer—importer, merchant, miller and user of the flour manufactured from the wheat—becomes so familiar with these qualities that the name stands for the qualities. At one time, on the British wheat market, Hungarian stood for the very best in respect to strength, low moisture content and quality of starch. Then, as it disappeared, Duluth Hard took its place, and was known to the British miller as the world's "strongest" wheat. And, even before this began to lose in favour, a new arrival appeared, which became known as Manitoba Hard, with all the excellent qualities which Duluth formerly possessed. Manitoba, the province in which most of this was grown at that time, gave to it a name. This name applies now to all the hard red spring wheat produced on the prairies from the Red River to the foothills of the Rockies, and from the International boundary to the Peace river, including three provinces, Manitoba, Saskatchewan and Alberta. The name Manitoba is a part of all the statutory and commercial grades of hard red spring wheat produced in this area, as e.g., Manitoba No. 1 Hard, Manitoba No. 1 Northern, 2 Northern and 3 Northern and on down to 6, and collectively they are known as Manitobas, not only in the United Kingdom, but in more than a score of countries on the five continents to which enterprising exporters have sent them.

Indian wheats are grown in the interior of that country, and have taken on a variety of names, the most important of which is Karachi (red and white) from the name of the port at which it is collected, and from which it is exported, though no wheats are grown in the vicinity of the port, nor for many miles beyond it till the limits of the desert are passed.

The wheats grown in the Argentine are known generally as River Plates or Plates from the river of that name bordering on which were the first wheat growing areas. As the industry extended, certain areas and certain ports gave definite names to their wheats, which, in most cases, represent certain distinct characteristics even though they are all grown in the same country. These are Rosafe (Rosario and Sante Fe), Barusso, Baril.

Australian wheats are remarkably uniform in colour and in quality; though it is claimed that the wheats of Western Australia—a comparatively dry area—possess greater strength and lower moisture content than otherwise. They are traded in under the name of Australians, though the shipment may be designated as from Queensland, New South Wales, Western Australia according to its place of origin.

Canadian Certificate final and f.a.q. (fair, average quality) contracts.

The two principal methods of purchasing grain on the Old Country markets are (1) contract, f.a.q. (fair, average quality) which means that samples of the season's crop in the exporting country are collected over a certain period, say a month. This sample is sent forward to the importing countries, and constitutes the standard—quality, weight per measured bushel, colour, moisture content, cleanliness, soundness, etc.—which will be delivered on the contract, failing which an arbitration will be held and matters adjusted as between buyer and seller. A fair sample of the shipment is taken by authorized agents of the Corn Trade Association of the port where the cargo has been landed. Two disinterested arbitrators are appointed from the arbitration committee of the local Corn Trade Association. Failing to agree, these choose a third, and if a satisfactory settlement cannot be arrived at the matter is referred to the whole committee for final judgment. Should the grain be adjudged under the standard of the f.a.q. sample, the seller must compensate the buyer up to a stated amount per cental and vice versa. Both Australian and Argentine wheats are dealt in on the f.a.q. contracts, which have been gotten out in printed form by the different Corn Trade Associations, all based upon the form of the London Corn Trade Association. In the case of Russian wheat, that is now coming on to the British and the continental markets, in small quantities with variable amounts of mixtures of other grains (rye, etc.) and extraneous matter (soil, weed-seeds, etc.) specific clauses have been added to the London contract to fit the case, and afford mutual protection to the buyer and the seller. The f.a.q. method is cumbersome and expensive, and leads to numerous disputes and much delay. The millers like it in some respects, as they can always get an adjustment on a shipment that is not up to standard samples.

The second method is the Certificate final based upon a strictly uniform grading system. By this method, most of the wheat imported from Canada and much from the United States is bought. Canada has four statutory grades for red spring wheat, Manitoba No. 1 hard, No. 1, 2, and 3 Northern; three commercial grades, 4, 5, and 6 and feed, and, when seasonal conditions warrant the making of them, 4, 5, and 6 special. Other grains also are graded according to established standards fixed either by law or by a Standards Board appointed by statute. The grain trade of the Old Country has become familiar with the name Manitobas, as applied to Canadian wheats and to Canada Western (C.W.) as applied to oats, barley and flax, and it has certain well-defined standards of quality which it expects delivered on the Canadian Certificate final, which it purchases. The millers, whether they purchase their supplies from the importer, merchant, or directly through their own agent, feel that they have a real grievance if the grain, when it arrives, is not up to the standard they expect it to be. From the average of many parcels which they have already had delivered to them, they expect to get fairly definite results in quality and yields of flour from a particular grade of Manitobas. If a sample of the grain from a ship-

ment is not up to the standard which they expect to have delivered in colour, hardness, quantity and quality of gluten, soundness, freedom from mixtures, moisture content and cleanliness, they are disappointed—their confidence is shaken. They talk the incident over with their associates, and their brother millers, and the result is that the reputation of Manitobas has suffered.

On the whole, the Old Country trade thinks very highly of the Canadian system of marketing grain. Especially is this true of the bankers, and importers, because of the expedition with which business can be done, the quick turnover, the facility with which the paper can be handled and the large volume of trade that can take place with such a small amount of friction. The millers like it because of the economy of the system, the reduction of costs to the minimum and the ease with which the business can be transacted, and on the whole they are well satisfied with its workings, but they point out that the occasional degraded deliveries cause them severe losses and disturb their confidence in the Canadian Certificate. One miller put it this way—"We want to be assured that we actually get on the Canadian Certificate final wheat that is fully equal to that we should expect, and that the grading shall be accurate and regular." "We want uniformity in the grading, so that we may know what to expect—uniformity throughout the season and the same uniformity through the years." Another miller said, "I am indifferent as to how the Canadians handle their wheat so long as the quality, the uniformity of quality, and the price suit the conditions, *i.e.*, meets the competition ruling here as affected by the competition of other exporting countries. You may be sure of this, that Manitobas have an intrinsic value in themselves, *viz.* for their strength and yield, especially ones and twos. If these are impaired in any way—if the grades are lowered by degrading or mixing either intentionally or unintentionally, the British miller will know it, and the price will be lowered in consequence." This was confirmed by the evidence of other millers.

How Values are Ascertained.

In order to satisfy myself on this question of value, I made inquiries of the millers as to what steps were taken to ascertain the intrinsic values of the various wheats they grind. In the office of one large milling company, I put the question to the Director in charge of this branch of the work, whose duty it is to direct investigations respecting the milling values of wheats, and advise in respect to purchases of kinds and quantities to be used in several large mills. He turned at once to a pile of unopened mail on his desk, and picked up several envelopes of the same kind and said, "These are from our central laboratory and contain the reports of the work done on the various shipments of grain just received." He opened some at random, and showed me the results of the examinations of some Manitobas among others. Without any attempt at selection, he gave me a few exhibits. The following are copies of two of these:—

TO TECHNICAL COMMITTEE, LONDON

Examination of Wheat

Type No. 1 Manitoba.
Shipped from New York.
Quantity 4,000 Qrs.

Working

Date 27th May, 1924.

Ex. S.S. (Deleted)

Lbs. per bushel 63.

Kind of sample—Bulk sample from
W. Vernon & Sons, Ltd., London X
Mill.

Admixture Report		Analytical Report	Remarks
Broken and small wheat.....	% 1.93	Moisture..... %	12.66
Oats.....	0.10		
Barley.....	0.05		
Black seeds.....	0.17		
Other seeds and dirt.....	0.16		
Knottings.....	0.02		
Chaff.....	0.05		
Admixture.....	2.48		
Clean Wheat by diff.....	97.52		
Total.....	100.00		

General Remarks on Condition, Smell, Weevils, Smut, etc.

Green Wheat (3 berries in 50 grm)..... 0.12%
Frosted Wheat (34 berries in 50 grm)..... 2.08%
per I Laboratory.

Where sample is too small to give a reliable figure under a heading leave it out. Always make a note if sample is received in a non-hermetically sealed package. Under heading "kind of sample" state who from and whether from bulk, paper bag, etc.

TO TECHNICAL COMMITTEE, LONDON

Examination of Wheat

Type No. 3 Manitoba.
Shipped from New York.
Quantity 5,000 Qrs.

Date 6th June, 1924.

Ex. S. S.

Lbs. per bushel 62½

Kind of sample—Bulk sample from
W. Vernon & Sons Ltd., London X
Mill.

Admixture Report		Analytical Report	Remarks
Broken and small wheat.....	% 1.45	Moisture..... %	13.83
Oats.....	0.98		
Barley.....	0.21		
Black seeds.....	0.09		
Other seeds and dirt.....	0.10		
Knottings.....			
Chaff.....	0.03		
Admixture.....	2.86		
Clean Wheat by diff.....	97.14		
Total.....	100.00		

General Remarks on Condition, Smell, Weevils, Smut, etc.

Green Wheat (5 berries in 50 grms)..... 0.20%
Frosted Wheat (66 berries in 50 grms)..... 2.97%
Bran frosted (84 berries in 50 grms)..... 6.28%
W.H.S.
per I Laboratory.

Where sample is too small to give a reliable figure under a heading leave it out. Always make a note if sample is received in a non-hermetically sealed package. Under heading "kind of sample" state who from and whether from bulk, paper bag, etc.

I visited the laboratory later. The chemist and his assistant were examining samples of wheat and testing wheats and flours for moisture content and for quantity and quality of gluten. In an adjoining room an expert baker was testing the flours in a practical way to ascertain their strength, absorption and other baking qualities, yield, etc. The manager of this—one of the newest and most modern mills in England—discussed the qualities of the various wheats that contribute to his mixtures or blends. "We buy Manitobas for strength and yield. They are better at the first of the season, October, November and December, than from January to the end of the season. They contain less moisture and possess a better quality of gluten." The chemist came in from the laboratory and laid before him a report on a Manitoba One Northern with a note as follows: "The quality of this gluten is below normal and should be used with caution." On another report covering a parcel of Manitoba One Northern received May 27, 1924, it was noted at the bottom, "34 frosted berries in 50 grams—2.08 per cent." I said to him: "Do you know the statutory definition of Manitoba One, Two and Three Northern?" He said "No." I asked him how he arrived at the price he could pay for these various grades. "I take into consideration what I expect to receive on the Canadian certificate based on my past experiences—strength as measured by the action of the flour when baked and yield of flour from the mill. Anything in a sample of wheat that deteriorates its strength or lessens its yield of flour lowers its value to the miller and consequently lowers the price he can offer for it. Frosted kernels spoil the flour. Most of our bakers use machines for mixing the dough and get bad results from such flour." "What effect would a sprinkling of tough kernels have?" "The tough kernels do not condition the same as dry kernels. They are soft into the endosperm and flatten out under the rolls and do not release the flour. There is a loss in yield and they make a bad job of our milling." "Can you detect tough berries in a sample by physical examination?" "No, the moisture content of the sample would show a little higher than it would if they were not there, but we should not and could not detect the presence of a few tough kernels. One of the essential things in conditioning wheat is to have the berries uniform to start with. If a sample is all tough we dry it and then add sufficient moisture to make it mill properly. I have talked with a number of millers," he said, "who say that Manitobas from Atlantic ports are not nearly so good as they were pre-war. We feel comparatively certain that Canadian wheats are 'whankled' (water added, soft wheats added, etc.) in Philadelphia. A number of millers have told me also that Manitobas through Vancouver are superior to the same grades through Atlantic ports this year. We specify when possible to get wheat through Vancouver. We pay more for it. Shipments on Canadian Certificate final vary too much through Atlantic ports. They are too uncertain. When we get a bad shipment we have no redress and consequently we bid lower and substitute other wheat when possible." In discussing Manitoba 3 Northern this miller felt it would be a distinct improvement so far as the millers were concerned if the bleached and sprouted could be kept separate from frosted wheat. These two classes of wheat give directly opposite results in the flour. "Manitoba threes are too variable," he said. His advice was for Canada to maintain a high and uniform standard for her grades so as not to disturb the confidence of the ultimate purchaser, the British and foreign miller. This was a London miller.

I went into this question of intrinsic values of wheat with several Liverpool millers. They analyze the samples from every shipment, as do the London millers, and they know the particulars in respect to what they are in the habit of receiving on the Canadian Certificate. I found some pronounced views in respect to the Canadian Certificate, and its finality, owing to a much degraded lot having recently been received by a Liverpool miller from Philadelphia on the ss. *Trevider*. The certificate called for 100,000 bushels Manitoba 1 North-

ern. It was badly mixed, some of it as low as 3 Northern, causing a big loss to the miller. This miller felt quite strongly that it was an injustice. "On this Canadian Certificate Final I have no redress, whereas, if this were on an f.a.q. contract, I would get a fair settlement." This miller was one of a number who opposed Australia's adopting a Certificate final plan. It was felt that the Canadian Government should stand behind its certificate, and guarantee the purchaser against such losses when the grain delivered was clearly below the grade specified on the Canadian Certificate final.

The Liverpool trade on the whole say that Canada's system of marketing her grain is the best in the world, but a great many complaints have been made during the last two or three years by the Liverpool Corn Trade Association to the Canadian High Commissioner's office in London owing to the receipt of off-grade shipments via Atlantic U.S. ports. The complaint is general from the millers here that Manitobas through Atlantic ports, without exception, are not as good as they were pre-war. Shipments from January on to the end of the year are not as good as they are in October, November and December—more moisture and more unsound kernels and the gluten strength is of a lower quality. One prominent miller had samples of Manitoba One Northern containing frosted and soft kernels. He was disappointed. They were not up to what he expected to receive, and for which he had bid a price based upon getting as good as the standard.

Another milling director, whose mills grind over 450,000 bushels per week, told me of his laboratory facilities for studying wheats. They have a chemist and a baker who make the necessary analyses and baking tests to enable the miller to know how to use the wheats to the best advantage and to enable the buyer to decide upon his quantities and fix his price for each particular grade or sort. He said, "Your Manitobas via Atlantic ports are not as good as they used to be; moisture is greater and gluten strength is not so good—too many soft berries. Vancouver's are better—all grades, but especially 3, 4, 5 and 6. We can use Vancouver 6's, but would not think of using Atlantic 6's. Atlantic 3's vary too much, frosted, bleached and sprouted. Manitoba One Northern via Vancouver is worth a shilling a quarter over Atlantic, and Vancouver threes have been nearly as good as Atlantic twos, and fours as good as threes, or nearly so. We set our prices according to what we expect to receive, based on past experiences. If the qualities of Manitoba threes are disappointing, we drop out of the market." Asked as to his opinion of the Canadian system of handling the grain crop, he said: "The Canadian system is the most reliable in the world, but the position of your producers would be bad if Canada allowed her grades to deteriorate or to lack uniformity. Keep your grades high and uniform and organize your sales better."

On this day, July 2nd, Manitobas were advancing in price. They were "out of line," and the millers and others were trying to find suitable substitutes. A cable from Buenos Aires while I was sitting in the office read: "Markets stronger following Canada," which indicated to me that where either quality or price are not satisfactory the English miller will endeavour to find a wheat that will satisfy the conditions of trade. While it was the general opinion of Liverpool millers that Manitobas through all Atlantic ports from Montreal south were not as good as pre-war, and not as good to-day as the same grades through Vancouver, there was not a single complaint against a shipment through a Canadian port either Atlantic or Pacific, for intentional adulteration with soft wheats. On the other hand, Liverpool buyers, while they prefer all Canadian shipments, do not discriminate in price against Manitobas via United States ports, nor do they specify via Canadian Atlantic ports.

In Glasgow, the opinions were in accordance with those expressed by the English millers. The Scottish millers are more dependent upon Manitobas than are the English. They must have strength (quality for a long strain) and this

they now can get only from Canadian Manitoba One Northern and from clean Russian when it is available. They were even more critical of the gradual deterioration of wheat on Canadian certificates. "Shipments of Manitobas of the same grade through Atlantic ports are not as good as they were pre-war—more moisture and lower gluten strength and the same grades are poorer now than they were last season up to December. They contain now more moisture and more thin immature inferior kernels." One miller said "I get 2 per cent less yield of flour now than I got last fall and early winter. I buy nearly all Manitoba One Northern because I have to in order to compete with the flour imported from Canada." Asked if he knew the statutory definition of Manitoba One Northern he said, "No." "What do you expect to receive when you buy a Manitoba?" He said, speaking for the millers present: "We expect to get as good as the standard sample and as good as we have been accustomed to receive." "How do you fix your price?" His answer was "the Canadian miller fixes the price and the Scottish miller has to compete with him for the wheat." "What would be the effect on price if Canadian grades were lowered?" "The price would be lowered accordingly." This miller said "we are not getting as good wheat from Canada through Atlantic ports as via Vancouver. Vancouver wheat is heavier per measured bushel, has more uniformity, larger dark red berries with thinner bran and is lower in moisture content."

"How does Manitoba 3 Northern meet your requirements?" "There are three factors affecting it, (1) frost, (2) soft wheat, (3) lightness, and we don't know what to expect. Frost is the most undesirable, and starchiness next, but we do not mind thinness in 3 so much, as with it we are likely to get more strength, and it is for strength primarily that we buy Manitobas. We have been told that the Canadian miller picks the best of the wheat for his purposes and this makes our position the more difficult. We are right up against it—we grind Manitobas alone for making our best flour, and we want it free from *frosted, bleached and sprouted grains.*"

I then asked why they paid more at times for Australian if Manitobas were so important to their business. "We use Australians for another purpose altogether. They give us colour—whiteness and bloom—and a soft flour for household purposes and for scones, pastry, etc. Another important factor in making a price for them is the price we can get for white bran. The Irish farmer will pay us from twenty to forty shillings, nearly \$10 per ton (2,240 lbs.) more for it than for red bran. And Australians give us about 50 per cent more broad bran and 1½ per cent higher yield of flour. Australians are scarce and arrivals uncertain owing to the good markets in the Orient and South Africa for their wheat. It all depends upon the supply and demand and the prices we can get for the flour and offals. If Manitobas were scarce and Australians plentiful the situation would be reversed. Keep your grades up to a high standard. We want uniformity and quality."

From him I heard the same evidence as to the superiority of Vancouver over Atlantic shipments. He had been in Vancouver and was told while there by someone interested in the trade of that port that the grading was higher than that through Eastern channels, and "this," he said, "explains why Scottish millers are paying premiums for Vancouver shipments. Vancouver four's are better than Atlantic three's. We have our laboratory for testing our wheats. At one time we were hopeful of getting our wheat supplies direct from the farmers of the prairies, but we have had to give that idea up as we found it impossible.

We grind large quantities of Manitobas, chiefly One Northern. Our capacity is about 5,000,000 bushels annually, 75 per cent of which is Manitobas. Our objection to Manitoba No. 3 Northern is the uncertainty as to the character the parcel will be when it arrives. Frost, bleaching and weight

all affect its value from the miller's standpoint. I would advise Canada to keep her standards high. It is our opinion that standard (statutory) grade Canadian wheats should be continuous and unalterable, irrespective of the nature of any particular season's crop. Conditions respecting Canadian grades should be such as would enable buyers to determine at the commencement of a season whether they could rely upon No. 1, 2, and 3 Northern wheat being of a similar quality to that of the previous year. If a superior grade of wheat could be created and maintained the millers of Scotland would not hesitate to pay a premium for the higher quality, e.g. a No. 1 Northern with a minimum weight of 62 pounds per measured bushel and this maintained throughout the year. We have no preference as to which Atlantic ports we buy through, but we have a decided preference for shipments via Vancouver." During 1923, 77 per cent of this company's wheat was Manitobas, of which 79 per cent was No. 1, 6.12 per cent No. 2, and 14.66 per cent No. 3.

The situation in Holland was different. They have been in the habit of expressing a decided preference for shipments via Atlantic ports; the reasons they gave me for so doing were: "Vancouver is on the Pacific coast. Our understanding has always been that only soft wheats are grown on the Pacific coast and we are afraid of mixtures of soft wheats with Manitobas." They preferred Atlantic shipments through all Canadian channels, as did so many others, but not to the extent of bidding a higher price to secure them in that way or of specifying through Canadian Atlantic ports.

Manitobas—Characteristics and Attributes.

The British and Continental miller has certain and well-defined characteristics which he attributes to Manitobas. He thinks of them as hard, red spring wheats. Taking the berries singly or in bulk, they possess a horny, vitreous appearance. Each kernel should be sound—free from frost, bleaching, sprouting, or from any defects from whatsoever cause. White or starchy kernels are objectionable. They give yield but lessen the strength of the flour. Frosted kernels are most objectionable, as the quality of the gluten is deteriorated, according to the degree of maturity at the time of freezing and according to the intensity of the penetration. Frosted berries do not condition the same as the sound ones and so there is a lack of uniformity and a consequent loss in milling. Bleached and sprouted berries and those damaged by disease are objected to for similar reasons—deterioration of quality and strength of gluten and reduction of yield. Slightly bleached and slightly sprouted may be affected but very little, and if they were by themselves, might, when the millers' confidence were established, command a good price, but again it is the uncertainty as to quality. Immature kernels of varying degrees, if present, alter the character of the flour and lower the yield. Smutty wheat, berries with smut spores adhering to them on the brush and in the crease not only give bad odour and flavour but discolour the flour. Tough kernels lower the yield and musty ones injure the quality. Broken wheat and other extraneous matter lower the yield.

Taking into consideration all these characteristics, natural and affected, the Canadian grades have been defined in order that the grain products may be handled and marketed and merchandised in bulk, with despatch, in the most efficient and economic manner from the producer to the consumer in the different foreign countries.

In the early days when southern Manitoba and southeast Saskatchewan made the name "Manitobas" known on the world's markets quite large quantities of Manitoba No. 1 hard were produced and forwarded overseas, but of late years there is none of this put on the foreign markets, the reason given being that there is not enough of it now to enable it to be accumulated in sufficient quantities economically for export. It was suggested that a grade be made

with a minimum at about the average of No. 1 Northern with a minimum weight of 62 pounds per bushel that would include what is now No. 1 hard and a large part of the better No. 1 Northern and constitute a quantity large enough for export. It was suggested that No. 3 Northern be made more uniform by separating frosted and bleached and sprouted, and that the weight per measured bushel be more uniform. Such grades, it was argued, would command higher prices than Nos. 1 and 3 grades do now.

Mixing.

I made inquiry in respect to mixing wheats in the Old Country. I was unable to find that importers and standholders mix wheat for the miller. The miller buys his wheats or grades of wheat, cleans, conditions and mixes them to suit his own particular requirements—products, quality, brand and prices considered.

The Transit and Storage Company of Liverpool has all the facilities for cleaning, drying and caring for wheat. It bins and grades separately. It could mix if asked by a miller to do so, but does not do a mixing business.

Sectional Preferences.

The Scottish Co-operative Wholesale Society had hoped to be able to secure wheat for their mills directly from the Saskatchewan wheat fields, and to this end established a small line of country elevators and started wheat raising themselves in one of the good-quality producing sections of Saskatchewan. They were, however, disappointed in this, for they could not make arrangements to preserve its identity.

The Dutch millers expressed a desire to purchase Saskatchewan wheat. They had a knowledge that good wheat was produced in that province and wished to get into communication with exporters who could furnish them with wheat grown there.

Spillers' Industries Limited are erecting a very large storage elevator at Vancouver and securing a chain of country elevators on the prairies partly in order that they may secure to themselves as far as possible, wheat in its natural condition. This company looked over the whole field, studied conditions and made this decision.

"Best Wheat in the World"

The President of Spillers' Industries Limited, in his address before the annual meeting of that Company, referred to Canadian wheat as generally recognized as the "best wheat in the world." When he said this he was referring to the expansion of wheat growing on the prairies and giving reasons for pushing their business into these new fields. . . . "But Manitoba 1 and 2 Northern are recognized as the best hard, red, strong, spring wheats in the world's markets. There is no doubt of this. Russia's wheat could be good, but it is not. It is full of mixtures and of dirt. But some day it will have to be reckoned with as a competitor. U. S. Red Winters and Duluths are required at home. Rosafe from the Argentine is a good wheat and can be substituted partially for Manitobas." "But you must bear in mind," said a miller importer, "when talking about *best wheats* that you are not comparing Manitobas—hard spring—with soft wheats or with durums that are used for entirely different purposes." "Manitobas have been too cheap this last year and we have used large quantities of them. If they become too dear—'out of line'—we will look for substitutes."

Other Grains.

Canadian oats are dirty. A better market would be afforded if they were cleaner. Horse feeders like a large, plump, white, thin hulled oat and will pay

more for it. Frosted oats have a black thread running along the crease. This gives an objectionable appearance to oatmeal.

The director in charge of buying oats for oatmeal manufacture gives the following description of oats wanted for milling: "Oats for milling should be sound, free from frost and reasonably dry. Tough oats can be used providing the percentage of moisture does not exceed 14 per cent and provided the price takes into consideration the extra cost of handling and the excess moisture content. The mixing of tough oats and dry oats is objectionable and results in an uneven quality of product. In general, oats for milling must be sound and sweet and of normal test weight; free from foreign grains, particularly barley, free from frost and of good merchantable quality. The general average test on oats of Western Canada of around 38 to 40 pounds might be said to be entirely satisfactory." Varieties should be grown pure as in the case of wheat. Yellow hulled oats give the appearance of weather and when mixed with white oats give the whole a suspicious appearance."

Canadian barley is dirty, lacking in uniformity of maturity, and on account of these defects cannot command the price of Danubian, Chilian, Californian or Russian either for malting or for the manufacture of pearl barley. A better quality would place it in a higher class than it now finds itself, and a higher price would obtain.

Centralized Buying and Selling.

Much interest was evidenced in the wheat pools of the prairies and their central selling agencies. The millers are anxious to know if it will reduce the price of wheat to them and the importers are busy trying to make connections that will ensure a continuity of supplies. There appears to be a gradual working towards centralized buying. The Dutch Millers' Association have contracted with the Von Stock Grain Co. of Rotterdam to purchase their wheat from them for a period of five years. The Russo-British Grain Export Co. was formed October, 1923. Note the following references to it:—

The Daily News—November 6, 1923:—

"Details of the Russo-British Grain Export Company Limited, registered on November 1, 1923. Nominal Capital £100,000 in £1 shares. The company is composed of fifty British and Russian interests. Russian: State Grain Export Co., The Russian Co-operative Union, and the Arcos Buying and Selling Agency in England. British: The Co-operative Wholesale Society, Shipton, Anderson & Co., A. E. Lawrence & Co., (grain brokers) and Furness, Withy & Co., ship-owners and shipping agents."

The Morning Post of April 7, 1924 contained the following:—

"The composition of the Russo-British Grain Export Company is the following:—

On the Soviet side:—

- (1) Centrosouz.
- (2) Arcos.
- (3) Exportkhlib.

On the British side:—

- (1) The British Society of Wholesale Buyers.
- (2) Shipton, Anderson & Co., Brokers.
- (3) Furness, Withy & Co., Shipping firm.

Capital provided equally by both sides. Active association exists with Lloyds Bank Ltd., who granted a loan on grain of more than £500,000 in a very short time."

Eastern Morning News—Hull, April 7, 1924, had the following:—

“It is stated that during the last two months the Russo-British Grain Export Co., Ltd., chartered some 70 steamers through Furness, Withy & Co., for transport of grain from Southern Soviet Ports. The Chief purchasers were: Germany, Holland, France, Belgium, Great Britain, Sweden, Norway, Denmark, Italy, The Near East and Finland.”

During the time of my visit Russian wheat was being received by the millers in both England and Scotland. It was being purchased on the London Corn Trade Association's contract with special clauses added to guarantee fair treatment in the matters of quality and price to both the buyer and the seller.

Milling.

A large section of the British and Irish Millers' Association have a research association for the purpose of investigating problems confronting them in their business of milling. They have received a financial grant from the government to assist in carrying on their work; secured a mill; provided for a laboratory and engaged Prof. E. A. Fisher to direct the research. This will probably be extended to include the bakers whose interests so far as flour is concerned, are identical with those of the millers. British millers are much interested in the work of wheat improvement that is being carried on in India, Argentine, Australia and Canada. India's wheats are being improved in strength and so are those of the Argentine. Canada's rust problem is of particular concern to them as are Australia's droughts.

The breeding of wheats for strength is being carried on in India under the direction of Prof. Howard. Already very encouraging results have been obtained. Higher gluten wheats have been produced. These have been tested for yield and strength on various soils and under a variety of conditions in different parts of India. Samples have been sent to the millers in England in order to get the benefit of their criticisms and suggestions.

Australia's wheats are good as a result of the splendid research work carried on there by the late Prof. Farrar, who produced for Australia the wheat known as “Federation”—a white wheat of excellent quality. But Australia's wheats are not as good as they can be. They lack uniformity of strength which is so important to the miller. Efforts are being made in Australia and encouragement is being given to the matters of wheat improvement, and not to wheat improvement only but also to methods of marketing and merchandising.

The British miller is very much interested in the wheat crops of the Argentine. And Argentine is more or less a competitor with Canada. The wheat known as “Rosafe” from the country tributary to Rosario and Santa Fe compares favourably in respect to strength with Manitobas. Efforts are being made to improve both the quality and the methods of handling the wheat of the Argentine. At the present time the Brazilian millers are able to secure the cream of the Argentine wheats for their mills but British millers are making efforts to secure a share of this better wheat by bidding a higher price for it. Argentina is increasing her acreage annually and in consequence, her exports. Since the war her exports have increased 59 per cent over her ten-year pre-war average.

Russia's case is different. During the ten year pre-war period she produced approximately 20 per cent of the world's wheat crop and outside the countries of Europe exported about 27 per cent. Since the war her exports have been almost nil. It has been pointed out that strong efforts are being made to organize a merchandising scheme for Russia's grain and evidence is not lacking that just as strong efforts will be made to restore production, and improve the quality especially of Russia's wheat. The time is looked forward to when Russian wheat will be a strong competitor with Manitobas on the

British market. Just now the shipments are foul with rye and other grain mixtures, together with straw, soil and other rubbish (screenings) amounting in some cases to over 10 per cent when delivered to the British miller. Adjustments in price are made according to arrangements set forth in a special clause attached to the London Contract covering dealings in Russian grains. (A copy of this contract is attached to this report marked Schedule "A.") Russian wheats were being tested by several British millers at the time of my visit. A laboratory report on Russian Wheat comparing it with Manitoba One, Two and Three Northern is also attached marked Schedule "B."

Attached also is a laboratory report of different species of Australian Wheat, marked Schedule "C."

Quality of Canadian One and Two Northern Wheats.

Among the millers interviewed in the Old Country on this question, the preponderance of opinion was to the effect that during the last ten or twelve years there has been a slight gradual lowering of the milling value of Canada's One and Two Northern wheat shipments to the Old Country through Atlantic ports, the evidence in the main being that in appearance the colour is lighter, the number of starchy kernels increased, the bran a little coarser; that frosted and damaged diseased berries are more common; that there is more foreign material—screenings—present; that the moisture content is higher. The importers and merchants made no complaints except against the occasional degraded shipments through Philadelphia and Baltimore.

In order to get the point of view of the millers, I examined with them a number of samples in their offices. I also saw samples in the offices of importers and on the stands in Mark Lane, and I examined arriving shipments on the docks. In addition, I obtained from the millers results of laboratory analyses, some of which have been made use of in this report. Invariably the miller separated out for my attention the kernels of the following description: piebald—starchy, frosted, immature, shrunken, deformed and discoloured. So far as frosted or otherwise unsound kernels are concerned, they undoubtedly had a grievance. The Canada Grain Act makes plain that Nos. One and Two Northern wheat shall be sound. But, in respect to the starchy berries, if they are present in a larger proportion than they were in former years, of course the colour of the sample will be lighter and the strength reduced.

It must be pointed out, in respect to this characteristic of our wheat grown in the hard spring wheat area, that many changes during the last fifteen years have taken place. The introduction of Marquis wheat, with its early maturing advantages, over Red Fife from 1911 on, made wheat growing comparatively safe in many districts where only coarse grains were grown before, and pushed the boundaries of the wheat belt much farther to the north. This, in itself, accounts for greater variations. And then it is well known that certain types and kinds of soil produce from the same seed wheats that are quite different in appearance and character from the parent seed and from one another. Marquis wheat in one district may contain 10 per cent while the same seed sown in another district will produce a 16 per cent protein product.

The climate has much to do in affecting the character and quality of wheat. Rain, sunshine, heat and cold—each appear to play very important parts in producing a particular type of berry. One district in southern Manitoba for many years produced a distinct type of wheat—fairly small, hard, red, vitreous kernels that used to be known as Manitoba No. One Hard. In another part of the same province, a distinctly different type of wheat grown from the same variety of seed is invariably produced—a large, bolder, duller coloured berry with more or less white starchy spots showing. And what is true of Manitoba is also true of the provinces of Saskatchewan and Alberta. These are the

extreme types, but in between them there are all shades of differences that are affected by one or more natural causes.

And then our wheat crop has its enemies. Among these are diseases of one sort and another, insects, etc., hot winds, frost, etc., all of which may and do alter the character of the appearance and quality of the berries.

The practice of mixing at the head of the lakes and at other points before reaching there has been going on for a number of years in a comparatively small way, but has increased rapidly since 1920. The evidence before our Commission showed that, while there were often times superior cargoes shipped out of the private houses, on the whole the grain out of the private houses was slightly inferior to that out of the public; the private house now is permitted to store its grain in the bins of the public along with the country run of other stored grain. No doubt the mixing of grain, as it has been carried on in the past, has played a part in reducing the quality of grain through Atlantic ports.

Canadian hard, spring wheat through the port of Vancouver originates almost wholly in the province of Alberta. That province had in 1923 a particularly fine crop all over the southern part of the province, where the conditions are favourable to the production of hard, red, plump berries. The crop from this district constituted a large part of the volume that was shipped via the Pacific route. This may, in part at least, account for the higher prices bid for this wheat at times by the British miller.

Poor seed has been responsible too for a lowering of the quality of hard spring wheats. Mixtures of soft wheats exercise a baneful effect in this respect. Pure Marquis seed or other similar variety will tend to keep our quality up to the standard of excellence required by the miller. Every effort should be made by those who have to do directly with improving the grain products of Canada to improve the practice of the farmers in the matter of selecting and sowing good seed of an approved variety.

Now it must be remembered that Canada's grading system, superior and all as it is, cannot be one hundred per cent perfect. It is not an exact science, and in the very nature of things cannot be reduced to mathematical exactness. Take for example No. One Northern wheat, which must be 60 per cent hard, Red Fife or Marquis wheat, sound, well cleaned and weigh 60 pounds to the measured bushel. It would be very difficult indeed, and I venture almost humanly impossible to produce a bushel of wheat that would exactly conform to the requirements as stated in the Statutory definition. But that could never have been intended.

Now, it may happen that a carload of wheat from a certain district may have fully 60 per cent of hard, red wheat, and the balance may be made up of starchy kernels of the same or a similar variety. If it is sound and clean, and weighs 60 pounds per measured bushel, it will grade No. One Northern. If there should happen to be any large number of such cars being emptied into the bins of a terminal at the same time, there is no doubt but what the character of a cargo of such wheat would make a very bad impression upon the miller who received it. It is possible for such a thing to occur, but it is not very probable for it to do so. It is, however, easily conceivable that millers do receive and have been in the habit of receiving during recent years shipments of wheat that contain a larger percentage of off-coloured berries than they were accustomed to receive in former years. Canadian wheat has usually been of such a high quality that it is not easy for the Old Country miller to understand why there should be anything else received from Canada.

That this colour and hardness indicating strength are important as price fixing factors is evidenced by the fact that analyses are made by the large millers of every arriving cargo, to ascertain the amount and quality of the gluten content.

The following data was furnished me as a sample of the work in this line:—

(a)

Grade	1924	From	Gluten		Index fig.
			Wet	Dry	
No. 1 Nor.	June 6	New York	35.76	12.76	70 (Above average strength)
No. 2 Nor.	May 16	"	36.51	13.04	71 (good average strength)
No. 3 Nor.	June 4	Montreal	32.48	11.60	52 (below average strength)
No. 3 Nor.	June 4	New York	32.44	11.58	46.5 "
No. 3 Nor.	May 24	Montreal	33.44	11.94	59
No. 3 Nor.	May 29	New York	33.76	12.06	48 (below average strength quality inferior to average)

Another wheat buyer gave me the following report on several cargoes:—

(b)

DELIVERED AT MILL 13-15TH Nov. 1923

	No. 1 Nor.	No. 1 Nor.	No. 2 Nor.	No. 3 Nor.	No. 3 Nor.
Protein.....	11.97	11.34	11.57	10.00	10.00

From one of the large Canadian mills in Western Canada, I obtained a report on the protein content of 114 cars of One Northern wheat, ranging from 10.8 per cent to 16.5 per cent.

I asked Mr. Jas. Begg of John Jackson & Company, importers, if No. 1 Northern wheat, guaranteed 14 per cent protein, would bring a higher price on the Glasgow market. His answer was: "We believe that millers would pay a premium for wheat of a guaranteed standard of gluten over the ordinary run, if the cost entailed by making this standardization and the preservation of its identity in transport did not exceed the commercial value of the higher gluten grade."

Cleanness.

Canadian wheat has left the terminals at the head of the Lakes and at Vancouver, sometimes with dockage. This was due to a very dirty crop that could not be cleaned fast enough to keep the grain moving from the country to the seaboard. In other words, the dirt choked the machinery and caused a blockade. No grain should be allowed to go abroad on Canadian Certificate final carrying dockage. The value of the wheat to the purchaser is reduced, and the effect will reflect itself in lower bids.

Unsound Berries.

The foreign miller expects No. One and Two Northern wheat to be sound—free from frost, sprouted, etc. The results of their analyses showed frosted kernels in these grades. A tightening up in the grading system, both into and out of terminals, will correct this.

Moisture Content in Canadian Hard Spring Wheats.

As pointed out in another part of this report, millers complained of the increase in the percentage of moisture in Canadian wheat from Atlantic ports.

The following figures, showing the moisture content of Canadian shipments, were obtained from millers:—

Glasgow millers—

	1923	Shipments from Atlantic ports	Average
No. 1 Northern.....	Jan. Feb. Mar.	12.5 12.5 12.8	12.65 12.55 12.95
No. 3 Northern.....		13.6	13.7
No. 1 Northern.....		From Vancouver 12.2	

During the months of January to March, Australians tested 11.5 per cent to 11.7 per cent, and Indian Karachi 10.7 per cent, 10.6 per cent and 11 per cent.

The English Co-operative Wholesale Society gave me the following data on natural moisture content of shipments received at intervals from 1914 to 1924:—

Date	Average Moisture	Date	Average Moisture
July, 1914.....	12.6	November, 1922.....	14.0
March, 1920.....	12.6	August, 1923.....	12.8
June, 1920.....	12.8	October, 1923.....	11.8
November, 1920.....	13.4	May, 1924.....	12.6
July, 1921.....	13.00	July, 1924.....	13.00
October, 1921.....	13.2		

From a number of the report sheets from the laboratory of Spillers Industries, Ltd., I obtained figures on the moisture content of cargoes arriving in England as follows:—

Date	Grade	Moisture
June 6, 1924.....	No. 1 Northern.....	12.70
June 17, 1924.....	No. 1 Northern.....	12.63
May 16, 1924.....	No. 2 Northern.....	12.89
June 12, 1924.....	No. 2 Northern.....	12.75
May 22, 1924.....	No. 3 Northern.....	13.87
May 24, 1924.....	No. 3 Northern.....	13.71
June 4, 1924.....	No. 3 Northern.....	13.18
June 4, 1924.....	No. 3 Northern.....	13.41
June 13, 1924.....	No. 3 Northern.....	13.83

The mill manager for Joseph Rank and Son, Birkenhead, gave me the following average moisture contents on shipments received on 1923 crops.

No. 1 Northern, 12.45 per cent.

No. 2 Northern, 13 to 13.25 per cent.

No. 3 Northern, 14 to 14.5 per cent.

It is common knowledge to all who are familiar with the production of wheat that moisture content varies with season, district, soil, maturity and exposure. Individual carloads and cargoes vary. It is because of this that the millers have samples of every cargo analyzed that they may know how much this important price fixing factor will have to be reckoned with in determining the price they

can bid for a particular grade of wheat. It was stated in evidence that good sound wheat fit for warehousing will sometimes contain 15 per cent of moisture. Some years ago, the regulation limit of moisture, so far as the test was concerned was 12 $\frac{5}{8}$ per cent. It has been raised to 13.9 per cent and this may have something to do with the increased moisture content of our wheat on the foreign market, if the contention of British millers is correct.

It was suggested—

(1) That samples of our grades be placed in the offices of the various trade commissioners, especially on the continent, as early as possible each year, in order that the trade in a port like Rotterdam might consult him regarding them.

(2) That the Canadian Government use its best efforts with the United States Government to secure the preservation of the grades against deterioration through mixing and substitution while Canadian grains are passing through United States territory for export. Shipments of more or less frequency have been received by importers and millers that are decidedly of lower grade than that named in the Canadian Certificate Final covering same. In certain cases, the shipments have contained mixtures of soft wheat. Baltimore and Philadelphia are the worst offending ports in these matters.

(3) That the quality of the wheat grown by the farmers should be continually watched by the various institutions of research and government to ensure that the grain at its source is not deteriorated in quality on the farm through the use of poor seeds, mixtures, soft varieties, etc.

(4) That our grades be maintained at a uniformly high standard of quality to the mutual advantage of both the producer and consumer.

(5) That Canadian millers should study the question of offals and see if it would not be possible to ship Canadian mill feed of the various classes properly sacked, in bags of 112 or 224 pounds each. If this could be done successfully, it would help to merchandise Canadian flour in Scotland and other parts of Britain.

All of which is respectfully submitted.

W. J. RUTHERFORD,
Commissioner.

OTTAWA, January, 1925.

SUMMARY

1. The United Kingdom and Holland import large quantities of Canadian wheat and other grains. Most of this is on Canadian Certificate Final; small quantities on sample and on American seaboard certificate.

2. The Canadian system of handling and exporting grain is considered by importers and bankers, and the trade generally, as being the best in the world—most expeditious, most economical. Millers would like compensation when shipments are not up to average. The f.a.q. contract system in practice with all countries except Canada and the United States is not as good as the Canadian system—too much delay, too many disputes, etc. Millers are compensated for inferior parcels under this system. Millers opposed Australia's Certificate Final plan.

3. Canadian grains are handled at the ports of landing in such a way as to preserve the identity of the grades and to secure out-turn weights—at least no complaints were made in these respects.

4. The hard red spring wheat of Western Canada is used for making flour. It is noted for its high protein—high gluten—and medium moisture content.

5. Systems of bread-making vary in different countries and in different sections of the same country. In Scotland it takes 12 to 16 hours from the flour to the loaf, and in England and Holland only 3 to 4 hours. What is known as the long sponge system as in Scotland, requires a very strong, high-quality, gluten flour; while the short system, as in England, requires "quality" of gluten rather than total strength.

6. Canadian flour made from Canadian hard spring wheat has an excellent reputation among Scottish bakers. Canadian flour imports made a place for Canadian hard wheats in the milling economy of Great Britain.

7. Canada's One and Two Northern wheats have an intrinsic value of their own, viz.—strength—gluten content. This makes for them a place in the milling economy. Being in this class of strong red wheats, they compete with such for place and price, e.g., Russian, Duluth and hard red winters. Canadian hard spring wheat does not compete in this sense with Australia's (white, soft wheat).

8. The millers of the Old Country have laboratory and other facilities for testing wheats and flours and know the intrinsic values of the wheats they purchase. So far as concerns Canada's One and Two and Three Northern, the important price fixing factors are strength, moisture content and yield of flour.

9. The price, dependent upon quality, appears to be determined largely by the law of supply and demand. There are, on the Old Country markets, occasional flurries in prices—a sudden rise and fall—caused by unreliable reports or mistaken judgment, but, on the whole, the law operates. Canadian hard wheats were too cheap up to June, because of the very large supply in sight—more than could be absorbed and consumed.

10. Liverpool, because of its futures market, is a sort of world barometer for grain prices. The Liverpool market has the fullest possible information respecting world crop conditions, world needs and world supplies, and naturally its ruling prices have a substantial effect upon the prices of wheat in all exporting countries.

11. Manitobas shipped via Vancouver are superior to those shipped via Atlantic ports, either Canadian or United States, grade for grade. This is especially marked in the grades from 3 to 6. Vancouver 3's are nearly as good as Atlantic 2's, and 4's nearly as good as 3's. The trade often spoke of wheat coming through Vancouver as Vancouver's. The difference in quality is marked in the goldness and redness of the berry, and the lower moisture content. So superior are the shipments from Vancouver that the millers will pay 6d. to a shilling per quarter (8 bushels) more than for the same grade via the Atlantic ports, Montreal and all ports south.

12. British millers and importers complained that deterioration of Canadian wheats takes place occasionally—too frequently—while they are passing through the United States in bond, especially through the ports of Philadelphia and Baltimore, and that they have no redress on the Canadian Certificate Final, unless fraud can be proven. The millers generally were of the opinion—

- (a) that Manitoba 3 Northern is too variable in its composition—frosted, bleached and sprouted kernels; in weight per measured bushel; that the shipments of this grade lack uniformity within a crop year, and that they vary too much from one year to another;
- (b) that Nos. 1 and 2 Northern contain too frequently frosted, immature, unsound, broken kernels, and starchy berries; also excess screenings;
- (c) that there has been a slight gradual lowering in the quality of Manitobas through Atlantic ports since pre-war and that the receipts of these grades from January to June and July are inferior to those

received from October to December, due to higher moisture content, more immature, starchy, unsound berries and excess screenings, and that in consequence the yield of flour is lowered, and its strength reduced.

13. The British miller—even the small miller up country, does his own mixing. He buys his different wheats, conditions them separately and then blends them in his supply bin. A miller may be grinding 75 per cent Canadian wheats to-day, and in a short time be grinding only 40 per cent or less. Prices and quality are factors that determine. The British miller is most expert. He can condition almost any kind of wheat if he has it by itself, but not if it is mixed with other different wheats, e.g., he can condition frosted wheat or durum wheat if need be when he has them by themselves. He cannot properly condition mixed dry and tough, hard and soft, thick and thin skinned, or sound and frozen wheats.

14. Old Country millers advise Canada to maintain high standards and keep them as uniform as possible throughout the season and throughout the years; retain confidence of consuming nations by making the Canadian Certificate a most reliable document; "keep your wheat up to the reputation it has on the prairies of being the best hard, red, spring wheat in the world." Duluth hard used to have this reputation.

15. The Scottish Co-operative Wholesale Society thought at one time they might get their wheat direct from the farmers of Saskatchewan, and so established a small elevator system and started a wheat farm, but found themselves unable to do this. Spillers have looked the field over, and have decided to erect a very large elevator at Vancouver and secure a chain of country elevators as feeders to enable them to get Canada's hard wheat as directly as possible from the wheat fields.

16. There is approximately 34,000,000 bus. capacity public storage silos and flat warehouses at the ports of the United Kingdom, and 1,550,000 at Rotterdam. Much of this storage is not used. It does not pay the owners interest on the investment. Wheat or grains will not go into public storage in the Old Country unless forced there. It takes the wheat out of its regular channel, and it costs too much to do this.

SCHEDULE "A"

CONDITIONAL CLAUSES GOVERNING PURCHASES OF RUSSIAN WHEAT TO THE UNITED KINGDOM

*Analysis attaching to and forming part of Contract dated 16th June, 1924.
200 tons Russian wheat per ss. Gileston.*

Any percentage of rye not exceeding 12 per cent to be taken and paid for a wheat and any excess over this to be allowed for by seller at contract prices.

Any percentage of barley and/or maize and/or oats up to 2 per cent to be allowed by seller at half contract price. Any excess over this to be allowed for by the seller at contract price.

Any percentage of grain and/or seeds other than specified above up to 1 per cent to be taken and paid for as wheat. Any excess over 1 per cent up to a further 2 per cent to be allowed for by seller at half the contract price. Any excess over 3 per cent to be allowed for by seller at contract price. Any percentage of dirt and other extraneous matter up to $\frac{1}{2}$ per cent to be allowed for by seller at contract price. Any excess above $\frac{1}{2}$ per cent to be allowed for by seller at double the contract price.

In the event of the grain being sold fair average quality, an average sample of the delivery shall be taken and sealed jointly at port of discharge by the agents of the shipper and the agents of the holders of the bill of lading or shipper's delivery order, and forwarded to the association for standard purposes. The expenses of sampling and forwarding to be paid half by buyer and half by seller.

LONDON CORN TRADE ASSOCIATION
BLACK SEA AND DANUBIAN GRAIN CONTRACT
STEAMER OR POWER VESSEL

1922.

Issued 1st August, 1922

Copyright.

*Parcels
Tale Quale*

LONDON 192..

Bought of

Sold to

on the printed conditions and rules endorsed on this contract.
of

Quality.

*at time and place of shipment about as per sealed sample marked.
in possession of

The grain is not warranted free from defect, rendering the same unmerchantable, which would not be apparent on reasonable examination, any statute or rule of law to the contrary notwithstanding.

Shipment.

Shipment in good condition.

from

Bills of Lading

Quantity.

. say units, 5 per cent more or less.
reckoning 1,016 kilos. or equal to 2,240 lbs. English

Contract price.

at the price of less per cent, say

Destination freight payment.

per lbs. shipped, including Freight and Insurance to

Freight payable on discharge, less advances for the ordinary ship's disbursements at Port of Loading.

Payment, cash in London, in exchange for Shipping Documents within seven days after receipt of invoice, less discount for the unexpired term of three months from date of Bill or Bills of Lading at Bank rate of the day on which the invoice is received by Buyer, but not less than 5 per cent per annum. If shipping documents have not been sighted at time of vessel's arrival at port of discharge, Seller must provide documents entitling Buyer to obtain delivery of the grain and payment must be made in exchange for same, such payment to be made without prejudice to Buyer's rights under the contract.

Policies.

Seller to give all policies of insurance (for original and for increased value, if any) on the parcel, all duly stamped, and for not less than 2 per cent over the invoice amount, including the above 2 per cent, any amount over the 2 per cent to be for Seller's account, in case of total loss only, and if and when called upon for the purpose of claiming upon Underwriters to give a letter certifying that there are no other insurances affected by him or by holders antecedent to him. Insurance on Lloyd's conditions which shall include the London Corn Trade Association's War Risk clause (or clause or clauses equivalent thereto), and the London Corn Trade Association's F.P.A. clause, to be effected with approved Underwriters and/or Companies domiciled in and paying losses in England on gold basis, for whose solvency Seller is not to be responsible. Any expense for covering the London Corn Trade Association's War Risk exceeding one-half of one per cent to be for account of Buyer.

Discharge.

Vessel to discharge according to the custom of the port.

The discharging strike clauses in the Black Sea, Azoff and Danube Charter Parties of 1890 are to be understood as forming part of this contract. (See back.)

Any lighterage charged by ship in accordance with the lighterage clause of the Black Sea, Azoff and Danube Charter Parties of 1890 to be paid by Receivers *pro rata* according to their respective Bill of Lading quantities, such expenses to be refunded by Sellers to Buyers in Final Invoice; and all Sellers and Buyers under contracts containing this clause shall be deemed to have entered into mutual agreements with one another to the above effect, and to agree to submit to arbitration all questions between them or any of them in regard to such *pro*

rata settlement as aforesaid in manner provided by this contract for arbitration of disputes.

If parcel sold to London vessel to discharge in one of the customary Docks, should vessel not so discharge Seller to be responsible to Buyer for all extra expenses incurred thereby.

If documents are tendered which do not provide for discharging as above, or contain contrary stipulations, Seller to be responsible to Buyer for all extra expenses incurred thereby.

The Unit of quantity under this Contract to be Unit
pro rata.

Should any of the above-mentioned quantity form part of a larger quantity of bags of the same mark, or of similar quality, whether in bags or bulk, no separation or distinction shall be necessary. All loose collected, damages and sweepings, and any excess or deficiency in the quantity delivered, shall be shared by and apportioned *pro rata* between the various Receivers thereof buying under contracts containing this clause, and any of them receiving more or less than his *pro rata* share or apportionment shall settle with the other or or others of them for the same in cash at the market price of the day of Vessel's arrival (such price to be fixed by arbitration unless mutually agreed). All Sellers and Buyers of any part of such larger quantity as aforesaid under contracts containing this clause shall be deemed to have entered into mutual agreements with one another to the above effect, and to agree to submit to arbitration all questions and claims between them or any of them in regard to such *pro rata* sharing or settlement as aforesaid in accordance with the arbitration rule endorsed hereon.

Sellers and Buyers shall give all reasonable assistance in ascertaining the *pro rata*.

All Sellers shall be responsible for the settlement of the *pro rata* by their respective Buyers within reasonable time.

If mutually agreed between Seller and Buyer, the Grain may be weighed Weighing. by approved Hopper Scale of 2,000 pounds or over, in which case the allowance for draughtage shall be 2 pounds per 2,000 pounds, any custom of the port to the contrary notwithstanding.

Seller and Buyer shall have the right of supervision both as to weighing and delivery.

In case of Sea Accident (pumping up grain excepted) causing a deficiency Deficiency. on Invoice Weight, Provisional Invoice quantity to be final as to measure, but the weight to be adjusted by the average weight of the sound grain delivered; but when shipment is made by weight, the Provisional Invoice to be final, unless, however, the deficiency cannot be accounted for by the nature of the accident and is not recoverable from Underwriters.

Any deficiency on Bill of Lading weight to be paid by Seller and any excess over Bill of Lading Weight to be paid for by Buyer, at contract price. The whole shipment to be weighed.

Damage by sea-water, or otherwise, if any, to be taken as sound. Any increase of weight by water to be allowed for.

Any general average prior to date of Contract to be for Seller's account. Average. Buyer in such case to furnish Seller, on settlement of amended Invoice, with the usual documents required by Average Adjusters for preparation of Average Statement, and to return to Seller the policy or policies received from him, together with all subsequent policies, if any, effected to cover any increase in c. f. & i. value, and to give a letter certifying that there are no other insurances known to Buyer.

Should the fulfilment of this contract be rendered impossible by prohibition Prohibition. of export, blockade or hostilities, this Contract or any unfulfilled part thereof to be cancelled.

Seller to pay Brokerage of per cent on the Brokerage. c. f. & i. price, Contract cancelled or not cancelled.

Buyer and Seller agree that, for the purpose of proceedings, either legal or by arbitration, this Contract shall be deemed to have been made in England, and to be performed there, any correspondence in reference to the offer, the acceptance, the place of payment or otherwise notwithstanding, and the Courts of England or Arbitrators appointed in England, as the case may be, shall, except for the purpose of enforcing any award made in pursuance of the Arbitration clause hereof, have exclusive jurisdiction over all disputes which may arise under this contract. Such disputes shall be settled according to the law of England whatever the domicile, residence, or place of business of the parties to this contract may be or become. Any party to this contract residing or carrying on business elsewhere than in England or Wales, shall, for the purposes

of proceedings at law or in Arbitration, be considered as ordinarily resident or carrying on business at the office of the London Corn Trade Association, and if in Scotland, he shall be held to have prorogated jurisdiction against himself to the English Courts, or if in Ireland to have submitted to the jurisdiction, and to be bound by the decision of the English Courts. The service of proceedings upon any such party by leaving the same at the office of the London Corn Trade Association, together with the posting of a copy of such proceedings to his address abroad, or in Scotland or Ireland, shall be deemed good service, any rule of law or equity to the contrary notwithstanding.

Difference in quality shall not entitle the Buyer to reject, except under the award of Arbitrators or the Committee of Appeal, as the case may be. All disputes from time to time arising out of this contract, including any question of Law appearing in the proceedings, whether arising between the parties hereto, or between one of the parties hereto and the Trustee in Bankruptcy of the other party, shall be referred to Arbitration, according to the Arbitration Rule endorsed hereon, and this stipulation may be made a rule of any of the Divisions of His Majesty's High Court of Justice in Ireland, on the application of either contracting party, for the purpose of enforcing an award against a party residing or carrying on business in Ireland. Neither Buyer, seller, Trustee in Bankruptcy, nor any other person claiming under either of them, shall bring any action against the other of them in respect of any such dispute until such dispute has been settled by Arbitrators, or by the Committee of Appeal, as the case may be, and it is expressly agreed that the obtaining an award from either tribunal, as the case may be, shall be a condition precedent to the right of either contracting party to sue the other in respect of any claim arising out of this contract. All costs of or connected with the stating and argument of any Special Case for the opinion of the Court on any question of law arising in the course of the reference shall be borne and paid by the party requiring the same to be stated unless or except so far as otherwise determined by the award to be made in the reference.

ROUMANIAN LOADING STRIKE CLAUSE

The Arbitration to be held in London.

1. Should shipment of cargo or parcel or any part thereof be prevented at any time during the last 28 days of guaranteed time of shipment, or at any time during guaranteed contract period, if such be less than 28 days by reason of riot, strike, or lockout at port or ports of loading, then Shipper shall be entitled at the termination of such riot, strike, or lockout to as much time for shipment from such port or ports as was left for shipment under the contract prior to the outbreak of the riot, strike, or lockout. In case of non-fulfilment under above conditions the date of default shall be similarly deferred.

2. Shipper shall give notice by cable naming the port or ports not later than two days (Sundays and holidays excepted), after the last day of guaranteed time for shipment, if he intends to claim an extension of time for shipment, such notice shall limit the ports for shipment after expiry of contract period to those from which an extension is claimed. All such notices shall be passed on in due course.

3. The Official Certificate of the Executive of the Special Committee of the Association of Merchants and Exporters of Cereals of Roumania, certifying the existence and duration of riot, strike or lockout causing the delay shall be attached to the shipping Documents.

4. Notices of the outbreak and termination of riot, strike or lockout shall be cabled by the above Executive to the London Corn Trade Association within five days of each event.

CONDITION AND RULES

Appropriation.

1. *Notice of Appropriation* with ship's name, date of Bill or Bills of Lading and approximate quantity loaded shall be given by the Shipper of the grain tendered under this contract direct or through his House or Representative or Agent in London to his Buyer within 10 days from date of Bill of Lading and by each other Seller within 10 days, or in due course if received by him after that time, should the Shipper's notice be delayed beyond the 10 days through any cause beyond his control it shall be given within one business day from arrival of documents in London, and shall be passed on by each other Seller to his Buyer in due course on receipt. On demand of Buyer, Seller shall give a copy of the particulars contained in the notice of appropriation received from his Seller, and Buyer shall, on demand, give to Seller a written receipt of notice

of appropriation. A valid notice of appropriation when once given shall not be withdrawn. Provisional Invoice based on Bill of Lading weight with ship's name and date of Bill or Bills of Lading shall be sent by Shipper's house or representative in London to his Buyer within two business days of receipt of notification of arrival of documents in London and by other Sellers to their Buyers respectively in due course after receipt. A notice or tender to the Broker or Agent shall be deemed a notice or tender under this contract. Any appropriation or invoice received after five o'clock p.m., or half-past twelve p.m. on Saturdays, shall be deemed to have been received on the business day following. If shipping documents have not been sighted at time of vessel's arrival at port of discharge, landing charges, if any, incurred shall be borne by Seller, and allowed for in final invoice, unless the Buyer has refused to pay against the documents tendered in payment clause in contract.

2. *Shipment Clause.*—Should the grain arrive out of condition, due allowance shall be made for the time of year in which the shipment took place. The fact of the parcel so arriving shall not necessarily be sufficient proof of an improper shipment.

2a. *Any Commission on Freight* to be for Seller's benefit, but any discount for payment of freight in cash to be for account of Buyer.

3. *Bill of Lading* to be considered proof of date of shipment in the absence of evidence to the contrary. Each shipment appropriated in whole or part fulfilment of this contract to be considered a separate contract, but each Bill of Lading not to be considered a separate shipment except as to the date on which it can be appropriated. In the event of more than one shipment being made each shipment to be considered a separate contract but the margin on the mean quality sold not to be effected thereby.

4. *Notice to Retire Documents* shall be given by Buyer to Seller before 11.30 a.m. on the day of payment, non-business days excluded, except on Saturdays when the time shall be 4 p.m. on the business day prior to date of payment. *Non-Business Days.*—Sundays, Good Friday, Easter Monday, Whit Monday, the first Monday in August, Christmas Day, and the next week-day following, and any other days proclaimed as Bank or General Holidays.

5. *Settlements.*—After the documents have passed, first Seller and last Buyer may settle all claims together, in which case the intermediate provisional invoices shall become final. When settlement of final invoice is not made until after the prompt date has expired, interest on the amount due shall be added from the prompt date to the date of payment, at bank rate but not less than 5 per cent per annum.

6. *Sampling.*—Samples taken at time of discharge shall be the only samples used for Arbitration purposes.

7. *Default.*—(a) If the Seller defaults in shipping or declaring shipment the contract shall be closed by invoicing back the goods contracted for at such price, whether higher or lower than the contract price, as the London Corn Trade Association or persons appointed from time to time by them shall determine, such price to be accepted as final and binding by all parties. The Association shall if requested by either party declare the closing price, and settlement shall be made in accordance with and on the basis of such price by nett cash payment not later than 30 days thereafter.

(b) If the Buyer defaults in the fulfilment of contract, the Seller shall have the option after giving notice by letter or telegram (without prejudice to any other rights he may have), of re-selling against the Buyers who shall make good the loss, if any, sustained on such re-sale on demand.

(c) *If either party shall suspend payment or become Bankrupt or Insolvent, or commit any act of Bankruptcy or (being a Company), go into liquidation whether voluntary or otherwise, except for the purpose of reconstruction, or shall become lunatic or insane or die without leaving executors or others willing and able to take over the liability attaching to such party, he shall be deemed to be in default, and the contract shall be closed forthwith either at the market price of the day to be declared by the London Corn Trade Association as above provided or at the option of the other party at a price to be ascertained by re-purchase or re-sale as the case may be before the expiration of the next following business day after the cause of the default shall have become known to the other party any difference between contract and settling prices to be for account of the party in default.*

8. All claims for *Arbitration*, except for quality and/or condition, shall be made, and the party claiming shall appoint and instruct his Arbitrator not later

Shipment Clause.

Proof of shipment.

Retirement of documents.

Settlements.

Sampling.

Default.

Claims for arbitration.

than twelve months after expiry of contract time of shipment, or not later than six months after final discharge of ship whichever period expires last, but when Buyer claims arbitration for quality and/or condition upon samples previously drawn and sealed, he shall, if he is the last Buyer, appoint his Arbitrator, and give notice of such appointment to his Seller not later than seven running days after final discharge of shipment, but if he is an intermediate Buyer then in due course after receiving notice from his Buyer. If the claim is for condition, the Seller, if he is the Shipper, shall appoint and instruct his Arbitrator, within three business days after receipt of Buyer's nomination; and if he is an intermediate Seller, then in due course after receipt of nomination from his Seller. If the Arbitration is delayed by either party without reasonable cause, the Arbitrators shall take such delay into account in making their award.

Finality rule.

9. *Finality Rule.*—Arbitration on quality having been claimed in accordance with the terms of this Contract, the parties claiming must proceed with the Arbitration within 28 days of final discharge when sold on sample, or when sold fair average quality within 28 days of the publication in the Trade Lists that the Standard has been, or will not be made. After the expiration of these limits, claims for quality to be void unless the delay is, in the opinion of Arbitrators, considered justifiable.

"About."

10. The word "*About*," when referring to quality at time and place of shipment, shall mean the equivalent of one-half of one per cent on Contract price.

Arbitration Allowance Clause.

11. If in the opinion of the Arbitrators, or the Committee of Appeal, the difference between the delivery and the standard (after taking into account the amount, if any, allowed for deficiency in natural weight), does not amount to one-half of one per cent on Contract price, no allowance for quality shall be made, otherwise the full allowance for difference in quality shall be awarded.

Arbitration.

12. *Arbitration.*—All disputes arising out of this contract shall be from time to time referred to two Arbitrators, one to be appointed by each party in difference, the two Arbitrators having power to appoint a third. In the event of one of the parties appointing an Arbitrator and the other refusing, or, for seven days (three business days if for condition), after notice of the appointment omitting to appoint and instruct his Arbitrator, or if any one or more of the Arbitrators shall die, refuse to act, or become incapacitated, and the person or persons with whom his or their appointment originally rested shall omit to appoint and instruct a substitute within three days after notice of such death, refusal or incapacity, or in case the Arbitrators or two of them shall not within 28 days (seven days if for condition), after the appointment of the last appointed of them make an award, then upon application of either of the disputing parties, and provided the applicant pays to the Secretary of the Association the sum of £3 3s., the question in dispute shall stand referred to two Arbitrators to be appointed by the Executive Committee of the London Corn Trade Association, such two Arbitrators having power to appoint a third. In case the Arbitrators appointed as last mentioned shall not within 60 days (seven days if for condition), after their appointment make an award or appoint a third Arbitrator, or in case either of the Arbitrators appointed by the parties shall refuse, or for three days after notice from the other of them shall omit to concur in the appointment of a third Arbitrator, then (and in such last mentioned case provided the party requiring the appointment shall pay to the Secretary of the Association the sum of £3 3s.) the said Executive Committee shall appoint a third Arbitrator, and in the case of the death, refusal to act, or incapacity of any Arbitrator appointed by the Executive Committee, the Committee shall from time to time substitute a new Arbitrator in the place of the Arbitrator so dying, refusing, or becoming incapacitated.

The Arbitrators appointed shall be, in all cases, at the time of the appointment, Principals engaged in the Corn Trade as Merchants, Millers, Factors, or Brokers, or Directors of a Company so engaged, and shall also be members of, or partners in a firm or Directors of a Company members of the London Corn Exchange, the Baltic, or the London Corn Trade Association, and residing in the United Kingdom.

No award shall be questioned or invalidated on the ground that any of the Arbitrators is not so qualified as aforesaid, unless objection to his acting be taken before the Award is made.

Every award shall be in writing on an official form to be supplied by the Association at a charge fixed by them, and the award in writing, on an official form, of any two Arbitrators (subject only to the right of Appeal hereinafter mentioned), shall be conclusive and binding upon all disputing parties, both with respect to the matter in dispute and all expenses of and incidental to the reference and award. The Arbitrators may at any time, if in their opinion the

circumstances require it, make a partial award, reserving any further questions in the reference for a further award or awards by them.

In case either party shall be dissatisfied with the award a right of appeal **Appeal**. shall lie to the Committee of Appeal elected for that purpose in accordance with the rules and regulations of the London Corn Trade Association in force at the date of the Contract, provided the following conditions are complied with:

- (a) The Award intended to be appealed from has been taken up.
- (b) Notice claiming appeal is given to the Secretary of the Association within seven running days from the date of the award, or if the award has been made by Arbitrators appointed by the Executive Committee as above provided within seven running days from the date of notice from the Secretary of the Association that the Award has been made. (If the party desiring to appeal is not resident in the United Kingdom of Great Britain and Ireland the time within which such notice must be given is extended for a period of 7 days beyond the times above mentioned.)
- (c) On giving notice of Appeal, payment of the following sum is made to the Secretary of the Association:—

- (1) £26 5s. 0d. for members of the Association.
- (2) £31 10s. 0d. for non-members of the Association.

If the Appeal relates to questions other than quality, even though including quality, the Appellant shall also pay to the Association such additional fees and expenses in respect of the hearing of the Appeal and Award, as the Appointed Committee of Appeal in their sole discretion shall by their Award direct to be paid.

The Committee of Appeal shall confirm the award appealed from, and the Appeal fees shall follow the award, unless four Members of the Committee decide otherwise. The award of the Committee whether confirming or varying the original award, shall be signed by the Chairman of the Committee, whose signature as Chairman shall be conclusive, and shall in all cases be final.

No appeal will be allowed unless the award is in writing on an official form, nor on awards for condition where the grain is sold on terms known as Rye terms.

Any person having an interest in the matter in dispute shall be incompetent to act as Arbitrator, or on the Appeal, or to vote on the appointment of Arbitrators by the Executive Committee, or at the election by the Committee of Appeal, but unless objection is taken at the commencement of or prior to the hearing of the reference or of the Appeal as the case may be, no award of Arbitrators or the Committee of Appeal shall be questioned or invalidated upon any of these grounds.

Notices under this Rule to be given in writing, and sent by post to, or left at the place where the person, firm or company to whom they are addressed is carrying on or (by reason of the provisions of the Contract), is to be considered as carrying on business, and shall be deemed to have been received not later than 24 hours after the same are so sent or left.

N.B.—The Discharging Strike clauses in the Black Sea, Azoff, and Danube Charter Parties of 1890, are as follows—

If the cargo cannot be discharged by reason of a strike or lockout of any class of workmen essential to the discharge of the cargo, the days for discharging shall not count during the continuance of such strike or lockout. A strike of the receiver's men only shall not exonerate him from any demurrage for which he may be liable under this charter if by the use of reasonable diligence he could have obtained other suitable labour, and in case of any delay by reason of the before-mentioned causes, no claim for damages shall be made by the receivers of the cargo, the owners of the ship, or by any other party under this charter.

SCHEDULE "B"

LABORATORY REPORT ON RUSSIAN WHEATS

The samples were analyzed and compared with Nos. 1, 2, 3 Northern. The samples were marked as follows:—

- (a) No. 181, ss. *Finchley*.
- (b) No. 180, ss. *Dromore*.
- (c) Type 1 Nicolaeff Red Lima wheat.
- (d) No. 1 Siberian.
- (e) No. 2 Siberian.

An analysis was made on the dirty samples of *a*, *b*, and *c*, also on the clean wheat after the impurities had been picked out. For distinction the samples were numbered as follows:—

- 1—No. 181, ss. *Finchley*, dirty wheat.
- 2—No. 181, ss. *Finchley*, clean wheat.
- 3—No. 180, ss. *Dromore*, dirty wheat.
- 4—No. 180, ss. *Dromore*, clean wheat.
- 5—Type 1 Nicolaeff Red Lima, dirty wheat.
- 6—Type 1 Nicolaeff Red Lima, clean wheat.
- 7—No. 1 Siberian.
- 8—No. 2 Siberian.
- 9—No. 1 Northern Manitoba.
- 10—No. 2 Northern Manitoba.
- 11—No. 3 Northern Manitoba.

General Appearance.—The impurities in No. 1 sample were composed mostly of rye with a little cockle, smut grains and stones. The amount of impurities was estimated at 8.5 per cent. The general appearance and size of the clean wheat was found to be better than Northern, the grain being long and plump, while the Northern grain was short and had a clearer skin or glassy appearance.

No. 3.—The amount of impurities in No. 3 sample was estimated at 10 per cent, mostly composed of rye with a little cockle and foreign seeds. The amount of dust was greater than in No. 1, but not possible to estimate. The general appearance of the wheat was similar to No. 1 sample.

No. 5.—The amount of impurities in No. 5 sample was found to be 8.7 per cent and mostly composed of rye. The clean wheat was found to be a better quality than either No. 1 or No. 3, the grain being larger with not so many opaque grains.

No. 7.—The wheat was found to be practically free from rye and the size of the berries was of a fair average.

No. 8.—The wheat was found to be practically free from impurities, but the quality was not so good as No. 7.

Generally No. 5 is best for quality with the exception of the impurities. Next No. 7 and No. 8. Then 3 and 1.

The analysis of the samples showed the following:—

—	Moisture	Oil	Ash	Proteins	Sol. Ext.	Fibre	Starch
No. 1.....	12.31	1.44	1.72	11.45	3.88	1.2	71.88
No. 2.....	12.26	1.44	1.54	11.74	3.20	1.5	71.49
No. 3.....	12.72	1.52	1.62	12.08	3.66	1.5	70.56
No. 4.....	12.93	1.38	1.52	11.74	4.80	1.4	71.03
No. 5.....	13.55	1.50	1.59	12.95	4.16	1.7	68.71
No. 6.....	13.72	1.10	1.66	12.82	3.84	1.3	69.40
No. 7.....	13.31	1.48	1.66	12.59	4.00	1.5	69.46
No. 8.....	13.83	1.61	1.74	13.62	4.00	1.6	67.60
No. 9.....	12.20	1.78	1.46	11.38	3.80	1.4	71.48
No. 10.....	12.17	1.84	1.60	10.43	3.40	1.4	62.56
No. 11.....	12.36	1.72	1.70	10.20	3.72	1.7	72.68

From the above results the protein value of all the Russian samples are higher than No. 1 Northern which indicates plenty of strength. The samples appear to be in sound condition which is indicated by low soluble extract and moisture content. The oils of the Russian samples are lower than that of the Northern. The ash and fibre are about the average, while the starch is variable. However, there is one point which we might mention. The protein contained in rye have a pretelytic enzyme which have a power to dis-

solve protein matter into simpler substances, viz., amino acids. This would be inclined to make the gluten softer unless the rye can be removed.

Summary.—Our conclusions are that the Russian wheats are good as the Northernns, but one objection is the amount of the impurities.

June 6, 1924.

SCHEDULE "C"

LABORATORY REPORT—ANALYSIS OF DIFFERENT SPECIES OF AUSTRALIAN WHEATS

The samples of wheat vary in colour from white opaque to thin flinty grains like Northern Wheat:—

- No. 1. Sample was of white opaque variety of Wheat, very good quality and sound.
- No. 2. Sample was more of a flinty nature, long in size and not so plump as No. 1 sample.
- No. 3. Sample was between No. 1 and No. 2 but smaller in size and of inferior quality.
- No. 4. Sample was white in colour and opaque, small in size, shrivelled and bleached.
- No. 5. Sample was very much whiter than either No. 1 or No. 4 was of good size and average quality.
- No. 6. Sample resembled No. 3 for colour, opaque and good quality.

The analysis of the above samples was found to be as follows:—

—	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
Moisture.....	11.19	11.19	11.19	11.19	11.19	11.19
Oil.....	1.38	1.45	1.24	1.19	1.35	1.51
Ash.....	1.20	1.26	1.18	1.28	1.24	1.36
Soluble Extract.....	3.75	3.36	3.36	3.64	4.16	4.95
Fibre.....	5.7	6.3	5.6	7.2	6.5	6.5
Proteins.....	10.08	11.40	13.56	12.56	13.11	9.12
Starch.....	70.45	68.40	67.23	66.53	64.61	70.52
	100.00	100.00	100.00	100.00	100.00	100.00

From the above analysis it would appear that the various samples were different species. The greatest difference seems to exist in the soluble extract, proteins and fibre—the proteins value being exceptionally high in some cases.

GLASGOW, June, 1923.

A PARTIAL LIST OF PERSONS INTERVIEWED

EDINBURGH

Mr. Wm. Smith, Milling Director, Scottish Co-operative.
Mr. McLeod, Director, Scottish Co-operative.

GLASGOW

Major Johnston, Canadian Trade Commissioner for Scotland and Ulster.
Mr. John Martin, Secretary, Glasgow Corn Trade Association.
Mr. Law, Flour Importer.
Wm. Rutherford, Flour Importer.
Mr. Billsman, Baker.
Mr. Wm. Clark Reid, Flour Importer.
Mr. Isaac Scott of Craig Hill Milling Company.

Mr. Matthew White, Jr., of John White & Sons Milling Company.
 Mr. Wm. Primrose of Wm. Primrose & Company, Grain Importers.
 Mr. Jas. Begg of John Jackson & Company, Grain Importers.
 Mr. Wm. McDonald of McKinnon & McDonald, Grain Importers.
 Mr. Jas. McKim of I. & R. Snodgrass, oldest milling firm in Glasgow.
 Mr. Frederick Pool of Riverside Milling Company.
 Mr. Aikin, Grain and Flour Importer.
 Mr. Archie Campbell, Traffic Superintendent, Clyde Navigation Association.
 Mr. David Johns, Elevator Superintendent.

LIVERPOOL

Mr. Urquhart, Secretary, Liverpool Corn Trade Association.
 Mr. Wm. Love of Charlton & Bagshaw, Vice-President of Liverpool Corn Trade Association, Grain Importer.
 Mr. Richard A. Love, of Shipton, Anderson & Company, Grain Importers.
 Mr. A. B. Earl of Earl, Clayton & Stoddart, Grain Importers.
 Mr. Norman Vernon, Managing Director, Spillers Industries.
 Mr. Alfred H. Holby, Expert Wheat Buyer for English Co-operative.
 Mr. John Westgate, Wheat Buyer for Jos. Appleby Company, Millers.
 Mr. R. C. Winter, Manager, Liverpool Grain Storage & Transit Company.
 Mr. J. W. Charlton of Charlton & Bagshaw, Grain Importers.
 Mr. John Proctor, Miller & Wheat Merchant.
 Mr. E. Rice, Manager for J. Rank & Sons, Ltd.
 Mr. Geo. Broomhall, Editor, Liverpool Corn Trade News.

LEICESTER

Mr. Lindley Walker, Australian Wheat Exporter, Sidney, Aus., Interested in Australian Pools.

LONDON

Hon. P. C. Larkin, Canadian High Commissioner for Canada in London.
 Mr. Harrison Watson, Canadian Chief Trade Commissioner to the United Kingdom.
 Mr. W. A. Wilson, Agricultural Products Representative for Canada.
 Sir Herbert D. Robson of Ross D. Smyth & Company, Grain Importers.
 Sir Arthur Holmes of Shipton, Anderson & Company, Grain Importers, Chairman of Royal Commission on Wheat Supplies.
 Mr. Webb, Importer.
 Mr. K. B. Stoddart, of Earl, Clayton & Stoddart, Importers.
 Sir Geo. Saltmarsh, ex-Member, Port of London Authority, 1908-1923, Member and Vice-Chairman, Royal Commission on Wheat Supplies, 1916-1920.
 Mr. B. E. Spicer, Member, Associated Flour Millers Association.
 Mr. Plunkett, Agricultural Expert for Australia, Australia House.
 Mr. G. H. Mills, Managing Director, Yorkshire Farmers, Ltd., York.
 Mr. J. H. Green, Manager, Co-operative Mill, Silverton.
 Mr. J. T. Thompson, of Hovis, Ltd.
 Mr. J. G. Treharne, Director in Charge of Wheat Buying, Spillers Industries.
 Mr. W. A. Vernon, Director, Milling Expert, Spillers Industries.
 Mr. H. Wallace Vernon, Manager, The Millennium Mill.
 Mr. Richardson, Superintendent of Milling, The Millennium Mill.
 Col. Stevens, Representing Trafford Park Estates, Manchester.
 Mr. Webster, London Representative of Trafford Park Estates.
 Mr. Petrie Nichols, Wheat Buyer for Spillers Industries.
 Mr. Allen} Directors, Spillers Industries.
 Mr. Allen} Directors, Spillers Industries.

ROTTERDAM

Mr. Frederick H. Palmer, Canadian Trade Commissioner, Rotterdam.
Mr. J. C. Smolt, General Manager and Director, Grain Elevator Company.
Mr. C. A. J. von Stock, President, von Stock Grain Commission Company.
Mr. P. Speerenburg, General Managing Director, von Stock Grain Commission Company.
Mr. W. Verbeek, Manager of Wheat Department, von Stock Grain Commission Company.
Mr. A. de Koster of de Koster Flour Milling Company, Leiden.
Mr. H. L. Ravensway, Flour Miller, Rotterdam.

(Copy)

ROYAL GRAIN INQUIRY COMMISSION

QUEBEC, June 28, 1924.

The Hon. W. F. A. TURGEON,
Chairman,
Prince Albert.

DEAR SIR:

TRANSPORTATION

At the last meeting of the members of the Royal Grain Inquiry Commission, at Winnipeg, on the 29th April, 1924, you and other gentlemen composing the Commission—Dean Rutherford and Professor McGibbon—did me the honour to request that I should draw up a memorandum of my views as to transportation, in order that the same be attached to the original report of the Commission.

The very ample evidence which we have received at every important point from Prince Rupert to Halifax and from Vancouver to New York, upon this as upon all other questions connected with the object of our inquiry, as to grain and its movement, since the beginning of our work, on the 20th June, 1923, has, I think, made us all equally familiar with the question of transportation, and I fear that you attach too much importance to my having had 25 years experience in railway management and because several years thereof were connected with the transportation of export grain from Parry Sound to Quebec. Nevertheless, I shall do my best to meet your wishes, to the best of my ability.

One of the most important questions to be considered in connection with the successful production of grain in the prairie provinces of Canada is, naturally, that of transportation, or the means of bringing the grain of Manitoba, Saskatchewan and Alberta to the world's market, by the most economical route possible.

The position of these three agricultural provinces, in the centre of a great continent, with enormous distances separating them from the ocean, across which their grain has to be carried, is without parallel in the world. Little more than forty years ago, this country was an uninhabited wilderness.

To-day, less than two millions of people are scattered over an area of about 750,000 square miles of agricultural country, a territory larger than the combined areas of France, Germany, Italy and Great Britain, in Europe, countries which sustain a population of 185,000,000.

The farmers of these three provinces raised in 1923 about 450,000,000 bushels of wheat and 455,000,000 bushels of other grain.

The local consumption of grain is small, the urban and manufacturing population of these provinces being limited. And the imposition of a duty on wheat of 30 cents per bushel by the United States Government, subsequently increased to 42 cents, having had the effect of limiting the export to that country, the large surplus of our crop, after supplying the needs of the flour mills of Eastern Canada, has to find a market in Europe and other countries.

The great bulk of the grain, not used locally, finds its way to market by rail to Fort William and Port Arthur, at the head of Lake Superior, where the elevators have a capacity of 63,000,000 bushels, and thence, by water, to Buffalo, and other United States Lake ports, to ports in Canada, on the

Georgian Bay and at Port Colborne--and, to a very limited extent, by water, to Montreal. During the last few years, an export movement has taken place via Vancouver, which shipped eight million bushels of Alberta wheat in 1922, 18 million bushels in 1923, and an increasing quantity in 1924, probably reaching 50 millions.

The grain shipped from Fort William to Buffalo and other United States lake ports is almost all reshipped by rail to New York and other United States seaports, in bond, and exported abroad, very little being consumed in the United States on account of the heavy duty; some of it is ground, in bond, in United States mills and then exported as flour.

The grain shipped to Georgian Bay ports and to Port Colborne, and some of that sent to Montreal, is largely used for the supply of flour mills and grist mills in Eastern Canada, for seed grain for the farmers of Ontario and Quebec, and only a limited quantity is exported at Montreal, Quebec, Portland and St. John.

The statistical reports published by the Minister of Trade and Commerce, at Ottawa, give the following figures as to shipment by water from Fort William and Port Arthur in 1921, 1922 and 1923.

IN 1921		Rubbles
To Buffalo and other United States lake ports.....		106,599,310
Georgian Bay, Port Colborne and Montreal.....		119,979,041
		<hr/>
		226,578,351
IN 1922		
To Buffalo and other United States lake ports.....		150,226,027
Georgian Bay and Port Colborne.....		119,257,113
Montreal.....		4,710,796
		<hr/>
		274,193,936
IN 1923		
To Buffalo and other United States lake ports.....		140,625,386
Georgian Bay, Port Colborne and Montreal.....		156,049,694
Europe direct.....		196,300
		<hr/>
		296,871,370
SEVEN YEARS		
From 1912 to 1918, seven years—		
To Buffalo and other United States lake ports.....		518,762,749
Canadian lake ports.....		577,888,581
		<hr/>
		1,096,651,336

The above figures cover grain of all descriptions—wheat, oats, rye, etc. But as the diversion of our export grain trade to United States seaports consists almost entirely of wheat, a comparison of the exports from United States and Canadian seaports should be limited to that commodity.

The report of the Minister of Trade and Commerce shows that, in the crop year 1921-22, the exports of Canada wheat

	Rubbles
From New York, Baltimore, Boston and Portland, were.....	100,009,466
From Montreal and Quebec.....	28,130,051
From St. John, N.B.....	6,604,898
	<hr/>
	134,744,415

So that the comparison between United States and Canadian seaports, in the export of Canadian wheat in that year was 74 per cent and 26 per cent.

In addition to this, several million bushels were shipped by Vancouver and went to Japan and China, or through the Panama Canal, to Europe.

In the crop year of 1922-23 (1st September, 1922, to 31 August, 1923) the exports of Canadian wheat were—

	Bushels
To United States.....	12,936,048
Via United States ports to United Kingdom and elsewhere.....	129,871,095
Exported from Montreal and Quebec.....	57,030,848
Exported from St. John, N.B.....	12,014,152
Exported from Vancouver.....	17,829,671
Total.....	229,681,814

which makes the comparison between United States and Canadian Atlantic seaports 65 per cent and 35 per cent as regards exports overseas.

The distances, over which this great volume of business is being carried across the Atlantic, are as follows:—

	Miles
Via New York—	
Winnipeg to Fort William, rail.....	420
Fort William to Buffalo, water.....	860
Buffalo to New York, rail.....	400
New York to Liverpool, ocean steamer.....	3,100
Total.....	4,780

whereas, if sent all rail to Quebec or Montreal, the figures would be:—

	Miles
Via St. Lawrence—	
Winnipeg to Quebec, rail (1,372 to Montreal).....	1,350
Quebec to Liverpool, ocean steamer.....	2,633
Total.....	3,983

So that, western province grain exported via New York has to be carried 800 miles further than if it were shipped at Quebec, or about 650 miles further than if sent all rail to Montreal.

It is true that the grain sent by New York has a shorter rail haul than that sent all rail to the St. Lawrence, but on the other hand, it is subject to two double transhipments, one at Fort William and one at Buffalo, which are not encountered on the other route. These additional elevator charges, combined with the lake freight and the marine insurance from Fort William to Buffalo, not incurred on the all rail Canadian route, should more than compensate for the greater rail haul. For instance, the cost of handling wheat from Fort William to New York, in October, 1923, was:

	cents
Elevator charge, Fort William.....	per bushel 1.25
Lake freight, Fort William to Buffalo.....	" 5.20
Marine insurance.....	" 0.30
Elevator, Buffalo.....	" 1.00
Railroad freight, Buffalo to New York.....	" 9.10
Elevator, New York.....	" 1.00
Cents per bushel.....	17.85

The rate by the new Erie canal, Buffalo to New York, was $7\frac{1}{10}$ cents per bushel and yet the railway got the business.

A portion of the elevating charge at Buffalo and at New York is, in some cases, absorbed by the railway company, and the lake freight of 5.20 cents, from Fort William to Buffalo, in October last, was probably higher than in some previous years.

The all-water rate—lake and canal—from Fort William to Montreal was $12\frac{1}{2}$ to 14 cents per bushel in October, and although four cents cheaper than the through rate to New York, the latter secured 74 per cent of the business.

To what, then, is to be attributed this diversion of our western export grain to United States seaports? It is not a new question. It was the principal reason for which the Parliament of Canada, in 1904, undertook the building of the National Transcontinental Railway, as a public work; a road which was completed in 1916, which shortens the distance between Winnipeg and Quebec by 214 miles, and whose maximum gradient is four-tenths of one per cent, making it one of the most economical roads on the continent to operate. In 1913, the Quebec Board of Trade drew the attention of the Government to the alarming proportions which this great diversion had attained, and urged as a remedy the adoption by the Government of a policy which would make it substantially cheaper for the northwestern farmer to export his grain by Canadian seaports than by those of the United States.

These suggestions of the Quebec Board of Trade were three in number, namely:—

1. That the Government should make a freight rate over the National Transcontinental Railway then approaching completion, and about to be operated as a government line, of ten cents per bushel upon export wheat only, from Winnipeg to Quebec, with the usual reductions to Halifax and St. John.

2. That storage should be built for ten million bushels at each of the seaports of Quebec, Halifax and St. John as Montreal already has—so as to enable the railways to have a continuous flow of traffic, instead of the rush which now forces almost the whole business to the head of the lakes and thence to United States seaports during three months following the maturity of the crop.

3. That the Government should arrange with the marine underwriters that the rates of marine insurance upon vessels and cargoes, to and from Canadian seaports, should be made the same as those of New York.

In 1916, upon completion of the National Transcontinental Railway to Quebec, an attempt was made to carry out at least one of these recommendations. The railway was opened for traffic, under Government management, and a rate of freight was made from Armstrong to Quebec or Montreal, of 6 cents per bushel upon export wheat. The effect was instantaneous, a large quantity of wheat was brought to Quebec and Montreal for export and a number of ocean steamers were loaded. The then Minister of Railways, Dr. Reid, stated that the rate of 6 cents had been profitable when the grain was brought to Quebec and the Government railway got the whole of the earnings, but that it had been unprofitable when it had to be divided with two other roads in bringing it to Montreal.

This rate was shortly afterwards cancelled, and has since been raised to $34\frac{1}{2}$ cents per 100 pounds or $20\frac{3}{4}$ cents per bushel, which, of course, is prohibitory and compels all the traffic to take the lake boats at Fort William, thus facilitating the diversion of the export grain to Buffalo and New York.

In 1922, as a result of continued pressure from the farmers of the Northwest, the rates of railway freight from points in the Prairie Provinces to Fort William were reduced about 28 per cent to 30 per cent, a relief to the farmer of about 6 cents per bushel. This was a very considerable reduction, and gives the Canadian farmer a rate about 30 per cent to 40 per cent cheaper to Fort William than the United States farmer pays for similar distances from Montana and Dakota to Duluth, an advantage of about 8 cents per bushel. But this concession terminates at Fort William, whence the rate to Montreal or Quebec continues to be as before $20\frac{3}{4}$ cents per bushel, whereas, if the new rate from Calgary to Fort William were taken as a basis, the rate from Armstrong or Fort William to Montreal or Quebec should be only 11 cents per bushel, which was also the average boat rate in 1923 from Fort William to Montreal. This removal of competition, by the all-rail route, placed the western farmer more or

less in the hands of vessel owners on the lakes, and the result was that the water rates in the fall of 1922 were from $1\frac{1}{2}$ to 2 cents per bushel dearer than the previous year.

The traffic is being handled at present by three routes from Fort William, viz., to New York, via Buffalo; to Montreal, via Georgian Bay, and to Montreal, all water.

The comparative cost of these three routes, say in October, 1923, when a large business was done, was about as follows:—

	New York via Buffalo	Montreal	
		Via Georgian Bay	All water
Elevator, Fort William.....	1.25	1.25	1.25
Lake freight.....	5.20	4.50	12.60*
Marine insurance, lake.....	0.30	0.30	0.60
Elevator, Buffalo, Georgian Bay.....	1.0	1.0	.....
Railroad freight, Buffalo to New York.....	9.10	.....	.....
Railroad freight, Georgian Bay to Montreal.....		8.60	.....
Elevator, Montreal or New York.....	1.0	1.0	1.0
Total per bushel.....	17.85	16.65	15.45

*All water rate to Montreal fell to 11 cents in November, which is the average rate for the last six years, and it is still lower in 1924.

It will be seen from the above, that, although the cost of shipping via Buffalo to New York, is about $1\frac{1}{4}$ cent dearer than by the Georgian Bay to Montreal, and nearly $2\frac{1}{2}$ cents dearer than by the all-water route, from Fort William to Montreal, New York and other United States seaports continue to capture from 65 to 75 per cent of our export grain trade.

It is evident that Canadian seaports must have a margin of three cents per bushel, or perhaps more, in their favour in the inland rate to the seaboard, if they are to get this shipping business, or any considerable share of it, under the present conditions.

Notwithstanding the fact that New York is 500 miles further from Liverpool than Quebec is, ocean rates of freight from New York to Europe are considerably cheaper than from the St. Lawrence.

For instance, in October, 1923,—October is the busy month for Canadian grain shipments—the ocean rate from New York to Liverpool was $\frac{2}{3}$ or $6\frac{3}{4}$ cents per bushel, whilst the rate from Montreal was 3s. per quarter or 9 cents per bushel, a difference in favour of New York of $2\frac{1}{4}$ cents per bushel. Authorities most familiar with the trade state that the spread in ocean rates, as between Montreal and New York, averages one shilling per quarter of 480 lbs. to United Kingdom ports, which is equal to three cents per bushel, in favour of New York.

This discrimination in freight rates, notwithstanding the great saving in distance by the Canadian route, is largely due to the higher rates charged by the underwriters, to insure vessels using the St. Lawrence, than are charged for vessels using United States seaports north of Cape Hatteras. This applies also for cargoes, the rate from Montreal, in October, being 36 per cent dearer than from New York. Although the St. Lawrence route has been greatly improved and well lighted, at great expense, some excess in the rate of insurance might be looked for. But not 36 per cent. And it seems most unfair that Halifax should pay 15 per cent more than Portland. Should it not be the reverse, for so good a port? The recommendation of the Quebec Board of Trade is that the Government of Canada should arrange with the underwriters

to charge the same rates of insurance from Canadian ports as from New York, or do the business.

The Quebec Board of Trade, in its recommendation to Government in 1913, advised, so as to enable the railways to handle a continuous flow of grain traffic to Canadian seaports, instead of the rush that now forces so large a portion of the crop to the head of the lakes, and thence to Buffalo and New York for export, during the three months following its maturity, that elevator storage should be put up for ten million bushels, at each of the seaports of Quebec, Halifax and St. John, to make their facilities equal to those of Montreal, at that time. It was pointed out that the grain storage in the prairie provinces and on the Great Lakes was about 200 million bushels and at our seaports less than twenty millions.

This is being remedied to a moderate extent by the erection of an elevator at Montreal, which will have an ultimate capacity of 14 million bushels. But these facilities cannot pretend to compete with those of the present lake route which provide storage at the Georgian Bay and Port Colborne for 23 million bushels, at Buffalo for 29 millions, at New York for 9 millions, besides floating storage at Buffalo and New York, for several millions more. The Canadian wheat crop has increased from 193 million bushels, in 1919, to 474 millions in 1923. More storage must be provided if this increase continues, and upon the location of that additional storage will depend the route to be followed by the grain to the ocean vessel. That the present facilities are inadequate is proved by the fact that during the last three years many lake vessels and many ocean steamers have been under demurrage in Montreal on account of delay in getting access to terminal facilities. This means extra expense, which ultimately has to be paid for by the western farmer. If Canadian seaports are to obtain a substantial share of the trade which has been diverted to United States seaports—they cannot expect to get it all—or even if they are to take care of the annual increase of the crops, they must be properly equipped to handle it as well as the present export is now handled by the admirable organization which, for the present, finds it profitable to direct that export to New York. In other words, they must make the Canadian route the cheapest, not only to the seaboard, but to the consumer in Europe.

During the past three years, the port of Vancouver has attracted a considerable share of the export grain of Alberta and of western Saskatchewan, which finds a market in the Orient, and also by the Panama Canal, to Europe. This year, the figure has reached the substantial quantity of 50 million bushels, and it is hoped that the quantity will increase from year to year. This great advantage to the farmer of the far west has been made possible by the wise action of the railways in reducing their rates to Vancouver. For instance, the rate from Calgary or Edmonton to Vancouver, which, in 1920, was 15½ cents per bushel, has been reduced to 13½ cents. And even such points in Saskatchewan as Battleford, Biggar and Prince Albert, will find it cheaper to ship by Vancouver in consequence of these reductions.

The following figures will show the advantage which Calgary and Edmonton have enjoyed, say, in October last, in shipping by Vancouver instead of Fort William.

VIA VANCOUVER

	Per bush. c.
Calgary or Edmonton to Vancouver, 22½ C.P. 100 lbs.....	13½
Elevating at Vancouver.....	1
Freight to Liverpool.....	19½
Marine insurance.....	½
Total.....	34½

VIA FORT WILLIAM	Per bush.
Calgary or Edmonton to F.W. 26c. per 100 pounds.....	15½
Elevator at Fort William.....	1½
Lake freight to Montreal.....	11
Lake insurance to Montreal, 30c. to 50c. per 100.....	½
Elevating in Montreal.....	1
Freight to Liverpool.....	8
Marine insurance.....	½
	37½
	37¾

These figures do not include commissions, brokerage or inspection fees in either case.

Notwithstanding the wise policy of the Government and of the railways, in thus opening up a cheaper outlet by way of Vancouver, the cost of bringing the grain to market is still a formidable burden for the farmer, who, three years ago, was getting from \$2 to nearly \$3 per bushel for his wheat at Winnipeg, and now finds the price reduced to a trifle over a dollar.

The situation is such a difficult one that it has been the subject of parliamentary inquiry since. So much so, that a special select committee of the Senate of Canada made a special investigation of the subject, which lasted over two sessions of Parliament. After an exhaustive inquiry, at which the evidence of a great number of the best informed men in the country, in the grain trade, in elevating and in transportation had been taken, the Committee reported to Parliament that they recommended that the petition of the Quebec Board of Trade, as stated in its memorial of 3rd February, 1921, to the Railway Commission, be granted.

The conclusion of the Senate report, which was adopted on the 9th June, 1922, is as follows:—

“After careful consideration of all the evidence submitted, your Committee is of opinion that there exists a most serious condition of affairs, with regard to the diversion of the western grain trade to New York and other United States seaports, for export. There seems to be no doubt that two-thirds, and probably four-fifths of that trade takes that route, and that we are paying many millions annually to United States railways, lake carriers and elevators, that would be earned by our own railways and trainmen, if it were possible to export this grain at Canadian seaports. Since this evidence was taken, and at the present writing, Government statistics show that the diversion still continues, and that of the bountiful crop of 1921, no less than 99 million bushels of wheat went from Fort William to Buffalo.

“After all the sacrifices that Canada has made in building three transcontinental railways, it is impossible that we should go on allowing our seaports to be deprived of their legitimate traffic, to obtain which our people have been and are being so heavily taxed. A persistence in this policy must inevitably lead to serious dissatisfaction, not only in Quebec and in the Maritime Provinces, but also amongst the farmers of the Northwest, who will soon realize that these hostile railway tariffs are imposing a burden upon them which they are not called upon to bear.

“It may be, as some of our railway witnesses have suggested, that a reduction in the rate upon grain to our seaports might lead to reprisals and corresponding reductions on the part of the United States railways which have been handling so large a share of this traffic. But this cannot be injurious to our own railways, because it is an export traffic which, practically, they are not getting.

“In any case, such reprisal would certainly benefit the western farmer, and your Committee feel that it is their duty to report that they recommend that the petition of the Quebec Board of Trade, as stated in the memorial of that board to the Railway Commission, dated February 3, 1921, hereto attached, be granted, and that the Government be advised:—

“(1) To cause rates to be granted upon export grain over the Canadian National Railways to Quebec, Montreal, Halifax, St. John and Vancouver, such as would develop trade through the above ports.

“(2) As a corollary to the recommendation in paragraph 1, that necessary elevator accommodation should be provided by the Dominion at Canadian ports.

“(3) To arrange with the marine underwriters or others in such a way that the marine insurance rates from Canadian seaports be as cheap as from United States seaports.

“Respectfully submitted,

“(Sgd.) D. O. LESPERANCE,
Chairman.”

In May, 1923, the Government of Canada named a Royal Commission, composed of Hon. Judge W. F. A. Turgeon, of Prince Albert, Sask.; Dean W. J. Rutherford, of the University of Saskatchewan, Saskatoon; Professor Duncan A. McGibbon, of the University of Alberta, Edmonton, and James Guthrie Scott, Railway Manager of Quebec, to make a careful examination of the whole question of raising, transporting and marketing the grain of the prairie provinces.

This Commission has been at work since 20th June, 1923, and has visited all the most important points in Canada, and besides gaining information as to agriculture, which is separately treated of, has made a very close inspection of the methods and means of transportation, and has examined a large number of witnesses interested and versed in transportation.

Sir Henry Thornton, President of the Canadian National Railways, was examined at Saskatoon in July of last year, and gave the Commission much useful evidence. As to freight rates, he referred us to Mr. J. E. Dalrymple, Vice-President in charge of traffic, of the Government Railway System.

Mr. Dalrymple appeared before the Commission at Winnipeg on the 6th March last and gave evidence which lasted all day and which was most interesting and instructive. He was asked to explain why the rate of freight upon export wheat, from Armstrong or Fort William, to Quebec or Montreal, over the Transcontinental Division of the Government Railway System, which had been 6 cents per bushel, in 1916,—rate which the Minister of Railways had declared to be profitable—had been increased to 20½ cents. And also, whether, in his opinion, the rate could not be reduced, as requested by the Quebec Board of Trade, to 11 cents per bushel to Quebec or Montreal, so as to place it on the same mileage basis as the rate now in force—Crow's Nest basis—between Calgary and Fort William.

When cross-questioned, at some length, upon these points, by Mr. S. Woods, K.C., for the commission, Mr. Dalrymple admitted that the rate of 6 cents had been made in 1916, and read a letter from Mr. J. T. Ross, President of the Quebec Board of Trade, to the Hon. J. D. Reid, Minister of Railways, dated 4th February, 1920, quoting Hansard, page 3184, in which the Minister said that there was a loss when the grain was carried to Montreal for 6 cents, because the rate had to be divided between three railways (this is not now necessary) but that "though there is not very much profit in a 6 cent rate between Armstrong and Quebec, it pays, with a train load such as I have stated."

With regard to the suggested reduction, from Armstrong or Fort William to Quebec or Montreal, to 11 cents per bushel, or even to 15-½ cents per bushel, Mr. Dalrymple stated that if it were done, he thought the result would undoubtedly be:—

First.—The American lines, from Duluth would make the same rate to Philadelphia.

Second.—This would be immediately followed by a corresponding reduction from Milwaukee and Chicago.

Third.—This reduction from Chicago would be followed by a reduction from all the lower lake ports, including Buffalo.

Fourth.—The reduction from Buffalo would necessitate a similar readjustment from Georgian Bay ports to Montreal and Quebec, which is always ½ cent per bushel cheaper than to New York, reducing the present rate from 8.60 cents to 6.60 per bushel.

He concludes that he is convinced that the rate of 11 cents per bushel to Quebec will create a general reduction in rates on grain, and will unnecessarily deplete the revenue of the Canadian National Railways.

In further cross-examination by Mr. Woods, Mr. Dalrymple stated that the interstate commerce rules, in the United States, would not compel United States railways to reduce their rates from Duluth to Philadelphia in the event of Canadian rates being reduced, nor would it be necessary for them to have the permission of the Interstate Commerce Commission to reduce rates. He said that the present tariff rate on export wheat from Calgary to Port Arthur, 1,299 miles, is 26 cents per 100 pounds which is equal to $15\frac{1}{10}$ cents per bushel or $\frac{1}{10}$ of a cent per ton mile; from Port Arthur to Quebec or Montreal, 987 miles, $34\frac{1}{2}$ cents per 100 pounds and to Halifax, St. John, Boston or Portland $35\frac{1}{2}$ cents. He stated that the maximum grades on the Transcontinental, East bound, are $\frac{1}{10}$ of 1 per cent and compare favourably with those further West; that Vancouver has come to stay, as a winter port, and that the winter shipments from the head of the lakes have a tendency to decrease. He admitted that of the shipments of wheat, by boat, from Fort William, in 1922, United States seaports exported 100 million bushels and Canadian seaports 35 millions, and that during the months of December, January and February last, only 3,869,000 bushels of wheat went East by rail from Fort William, and that the traffic going to St. John is moved over the Long Lake Cut-off, and via Quebec over the Quebec Bridge. He said that Buffalo is considered by operators a strategic point for the distribution of grain to Europe, through all the U.S. seaports, from Boston to Newport News (Note—This is of no benefit to Canadian railways) and that 45 million bushels of the wheat sent to Georgian Bay and Port Colborne is used by Canadian Flour Mills.

In answering a question as to the desirability of getting for Canadian seaports the 74 per cent of the Canadian grain export which now goes by New York and other United States seaports, and thus giving to Canadian railways about \$15,000,000 which is now paid to American railways for carrying our grain from Buffalo to New York and other United States ports, Mr. Dalrymple said that if Canadian ports would provide a steamship service equal to that of the United States seaports and provided the rate of railroad freight would be profitable, then it would be in the interest of Canadian railways to handle the business. And in reply to a question as to whether the transportation men and elevator men of Canada should not get together to see if they cannot get the trade out of the rut that it is in to-day, Mr. Dalrymple said he should be glad to sit into any conference with that object in view.

Mr. W. P. Hinton, formerly General Manager of the Grand Trunk Pacific Railway, gave evidence before the Commission at Winnipeg, and upon being questioned as to the advisability of making a rate of 11 cents per bushel upon export wheat from Armstrong or Fort William, to Quebec or Montreal, with the usual addition to Halifax or St. John for winter shipment, said he thought that if care were taken not to provoke American reprisals, it might be arranged to make a winter rate over the Transcontinental Railway that would enable Halifax and St. John to compete with Atlantic ports obtaining their grain via Buffalo or New York. That it might be used as a club against boat combinations; that if a winter rate were obtained it might remain in effect all the year; and that 11 cents would compete with the present water rate to Montreal.

Mr. R. R. Dobell, General Manager of the Ogilvie Flour Mills, Winnipeg, also gave evidence before the Commission at Winnipeg, and stated that the recent transfer of the new Cunard liners *Caronia* and *Carmania* from the New York to the Quebec route will be of great benefit to Canadian trade and to the Prairie Provinces, and especially to the flour trade, as the docks at Quebec are admirably situated and equipped, and trains run close alongside the ocean steamer, avoiding the injury to flour bags, due to extra handling by shipment on the lake route, and securing economy in marine insurance. The wheat handled from the head of the lakes has increased eight times in twenty years,

and the export trade in flour is assuming very great proportions and is absorbing a large percentage of the wheat raised in the West. If the all-rail rate to Montreal and Quebec, over the Government railway, could be made as cheap as the rail and lake rate, on export wheat and flour, it would give a great impetus to milling in the West, furnishing a market to the farmers and employment to the people, and turning to Canadian seaports a large proportion of the great volume of our exports which now goes by New York. The present rate on flour, all rail, to Montreal is 35½ cents per 100 pounds.

The Royal Commission also examined a large number of other witnesses on the transportation question, railway and steamship officials, elevator men, grain merchants, shippers, etc., in Montreal, Toronto, Quebec, Halifax, St. John, New York, Buffalo, Fort William, Port Arthur, Winnipeg, Regina, Saskatoon, Edmonton, Calgary, Vancouver, Victoria, Prince Rupert and other points.

The result of the investigation proves, without doubt, the hardship of the position in which the farmer of the Northwest finds himself. Three years ago, he was getting from \$2 to \$2.60 for his wheat. To-day he is getting \$1.10. It does not cost him any less now than then to produce it. On the contrary, he complains that he has to pay more for his labour than formerly. It costs him 40 cents per bushel to get his wheat to the consumer in Liverpool. This is too big a share of the value of the article. But what is he to do? The price of the grain is regulated by the world's market, it cannot be raised artificially, as in the United States—a self-contained country—by the imposition of a custom duty. The Canadian farmer is the victim of his geographical position. He is too far from the seaboard. We have been trying to colonize a fertile country, almost as large as Europe, with little groups of settlers—scattered, perhaps unwisely because too soon—over a vast area, even as far north as Peace river, 2,843 miles from the ship at Montreal.

The soil has responded to the call in a marvelous manner. Canada has become the second largest wheat raising country in the world. Our agricultural revenue has increased from \$364,000,000 in 1900 to \$1,420,000,000 in 1922. The Prairie Provinces, with only one-sixth of the population of Canada, raised 51 per cent of Canadian field crops in that year. According to a recent report of the Department of Trade and Commerce, the value of the field crops of the province of Saskatchewan in 1922 was greater than that of Ontario, with four times its population. And yet, our production of wheat is only 14 per cent of that of the world. We cannot control the price. The cities and towns growing up in the Northwest show wonderful progress and vitality. But they can only consume a small portion of the crop. The surplus must be exported. The railways have done their duty. Not only have they moved the enormous crop with celerity, so as to give the farmer his money quickly, but they have reduced the grain rates in the Prairie Provinces to the Crowsnest basis, making the rates 38 per cent cheaper than the United States farmer pays in a similar zone, and they have also lowered the rates to Vancouver.

The population of the Prairie Provinces which has produced these wonderful results is largely composed of the best elements of Eastern Canada, of the best British farming class and of the best of the same class from the middle west of the United States. It is no exaggeration to say that this combination should produce the finest rural population in the world. The late war has shown us what those men could do in defence of civilization. They were largely instrumental in saving the Empire. Is it not worth some special effort on our part to keep this population in our country and to augment it? These men say that they cannot live in raising wheat at the price at which they now have to sell it. This seems very probable, when we consider the Canadian farmer, one hun-

dred years ago, sold his wheat for \$1.29, when the dollar was worth far more than it is to-day. His cost of living has greatly increased since then. What are we to do? Are we to allow this splendid population to drift away from us?

In the United States, the policy has been to protect the workingman and the farmer, so that they may earn a good living, and to such an extent has this been done, that both these classes are the best paid in the world and live in comfort. We have seen that the United States Government have not hesitated to protect the American farmer who raises wheat, even to the extent of 40 per cent of its value. But the United States is a self-contained country. It does not need to export food stuffs. Its enormous population is able to consume everything that its farmers raise. Our case is different, although we aim at the same results. Our population is sparse and scattered, and until it becomes more evenly balanced as to urban, manufacturing and rural population, we must export our surplus agricultural production, and it is a very large one. To do this, we must face the competition of grain raised by the cheap labour of India and Russia. We do not want our people to be paid on that scale. How are we to avoid it?

It is said that great ills require drastic remedies. Is not this a case in point? Is it not worth our while to endure some sacrifices, say for 10 years, so as to allow this great country, as to whose ultimate value there can now be no doubt, to get filled up a bit, to get a more dense population, to be able to consume more of its own products, to become more independent of the outside world? In other words, to make it possible for the people, so far away from their present market, to live by farming.

The only way to accomplish this is to cheapen, still further, the cost of bringing the export wheat of the prairie provinces to the ocean vessel. Every outlet should be opened wide to the farmer. The less he pays for the cost of putting his wheat in the world market in Liverpool, the more it will net him on the farm. And the price he nets for what he exports fixes the price at the farm for all he raises, whether he exports it or not. For this reason, the railways should make a specialty of export wheat. They have gone a long way towards this in adopting the Crowsnest basis of rates to Fort William. They should go further and should reduce the rates to Vancouver and Prince Rupert to the same mileage basis as the Crowsnest basis to Fort William. They should make the rates on export wheat and flour, from Armstrong or Fort William to Quebec or Montreal 11 cents per bushel, and to Halifax and St. John 12 cents per bushel, so that they may get the winter traffic, and thus carry out the recommendation of the Quebec Board of Trade, endorsed by the special Committee of the Senate. Moreover, it is the duty of the Government to do this, because it was on the distinct promise in Parliament, in 1904, that the Trans-continental would cheapen the rates of freight upon western grain to Canadian seaports, that the people consented to the building of this railway, which has cost the country \$160,000,000. It is a breach of faith with the Eastern seaports to keep the rate of freight at such a figure as to prevent this being done, after the railway has proved its ability to do it, and to do it profitably. The fear of retaliation on the part of American railways, is not well founded. Is it likely that they would reduce their rates to an unprofitable basis for their own large traffic, simply as a retaliation because Canadian railways made rates to bring Canadian traffic to their own seaports? How long would it last? The American Grain—largely corn from Chicago—that comes to Montreal and Quebec for export, comes there because it pays the shipper better to ship from there than from American seaports. There is no sentiment about it. Why should we not carry our own grain, over our own railways, to our own seaports? As the Senate Committee reported to the Government, this cannot be

injurious to our railways, because it is an export traffic which practically they are not getting at all. The railroad tariff prevents it.

Some people argue that we should carry out the costly scheme of deepening the St. Lawrence between Montreal and the Great Lakes, and also the Hudson Bay railway, both nominally for the purpose of cheapening the cost of bringing the western grain to market. But why go to this vast expense before giving the Transcontinental Railway now shut off by hostile tariffs, an opportunity to prove whether it can do what it was built to do? Is not our present policy most unbusiness-like? Would not our American friends be the first to tell us so? A canal is good for six months in the year. A railway for twelve months. The new Erie Canal was built for the purpose of bringing the western grain to New York. The railways continue to get the business, and in increasing volume.

Many people ridiculed the idea of building the National Transcontinental Railway, through the uninhabited North Country, even though, in 1,350 miles, it shortens the distance between Winnipeg and Quebec by 214 miles. Nevertheless, it was built, and so well built, and with such easy grades, that, as Mr. Dalrymple tells us, it is better than the roads west of Winnipeg. It has put 17,000 of 18,000 new settlers into the uninhabited Abitibi district. With a proper colonization policy, it will create a chain of settlements in the clay belt between Quebec and Winnipeg, through which it runs and will remove that menace of an unpopulated zone between the East and the West, which sometimes threatens our disruption. And this brand new railway has put to shame all the prophets of evil by doing a wonderful business. Last year, according to the Government Blue Book,

Its earnings were.....	\$ 14,139,136
Its expenses.....	14,120,975
Surplus.....	\$ 18,161

And this result was achieved when the gross earnings of other divisions of the Government Railway System were millions of dollars less than their operating expenses, and in spite of the fact that it carried no share of the grain trade, for which it was built, except for the short distance between Winnipeg and Fort William, where, it is to be presumed, it received a share of the through rate, which the accounts do not disclose. We cannot go far wrong in carrying export wheat over this excellent road from Armstrong or Fort William (or even from Winnipeg) to Quebec or Montreal at 11 cents per bushel, when a former Minister of Railways told parliament he could do it profitably for 6 cents, and when we see it being carried from Calgary to Fort William, over less economical tracks, at mileage rates proportionate to 11 cents.

I would go further than that, I would advise that the through rate upon export wheat and flour from all points in Saskatchewan and Alberta to Canadian seaports, should not exceed that from western Manitoba. For instance:—

Take Virden as a western point in Manitoba and Medicine Hat as a central point of Saskatchewan and Alberta, the present and suggested rates would be:—

	Miles	Present	Suggested
		\$ cts.	\$ cts.
Virden to Fort William or Armstrong.....	600	10 80	10 80
Fort William to Quebec or Montreal.....	960	20 70	11 00
Per bushel (cents).....		31.50	21 80

	Miles	Present	Suggested
		\$ c.	\$ c.
Medicine Hat to Fort William.....	1,075	14 40	10 80
Fort William or Armstrong to Quebec or Montreal.....	960	20 70	11 00
Per bushels (cents).....		35 10	21 80

By this plan, the western farmer would save from 10 to 13 cents per bushel, as compared with present rates, on any grain that he may send all rail to Canadian seaports, and from 7 to 10 cents per bushel, as compared with what he now pays to New York.

In the Peace River district, said to be the finest wheat growing country in the western provinces, the new settlers—I am told there are 8,000 of them—are 1,850 miles from Fort William and 1,175 miles from Vancouver, by the present route. It is impossible for them to pay freight upon their wheat for that distance, and live. They have commenced to leave the country. They should never have been allowed to go there. Their natural outlet, over the lowest summit in the Rockies, is Prince Rupert, or the Portland Canal, on the Pacific Coast, a distance of about 450 miles. The rivers and summit lend themselves to such a location and such a line would pass through, or close to the Ground Hog coal field, on the Upper Skeena, where there are enormous deposits of anthracite coal, said to be the only *true* anthracite west of Pennsylvania. Until such an outlet is built for this valuable country, I would recommend the Government to pay the cost of railway freight on grain from Peace River to Edmonton over the existing line, which would put the Peace River settlers on the same basis as the western Alberta farmer for exporting his wheat by Vancouver. This would probably cost the Government much less money than paying the interest upon the cost of another railway to join Peace River to the Government Railway System.

The unity of Canada and the ultimate success of its railway system, and the ability of that railway system to continue to make low rates of freight upon the grain of the prairie provinces, will depend largely upon the creation of a chain of settlements between the provinces of Quebec and Ontario and Winnipeg. The location of the Transcontinental division of the Government Railways through the clay belt, between the headwaters of the St. Maurice and Winnipeg, lends itself to this colonization movement. Already, one of the most rapid colonizing efforts which this continent has witnessed has taken place along this line, in the Abitibi district, which a very few years ago was an uninhabited forest. There are 18,000 new settlers there now. They have 22 organized parishes, substantial churches and schools and 45 saw-mills, and, last year, in spite of unreasonable freight rates, and lack of encouragement, they raised crops to the value of over a million of dollars and made pulpwood and sawn lumber in clearing their farms, to the extent of two millions additional. The valley of the river St. Maurice is the busy centre of the paper business of Canada, an industry which has become the second in importance in the Dominion. With this industry and this colonization, it is no wonder that this railway is already a paying proposition.

The development by railway of the spruce forests and water powers of the North has been more than equally successful in other parts of the Province of Quebec. Before the Lake St. John Railway was built, the population of the Lake St. John and Saguenay district was 10,000. To-day, it is nearly 100,000 and the region is one of the most progressive agricultural and industrial districts in Canada. It owes its rapid advancement to the wise colonization policy of the local Railway Company, which selected the settlers, carried them

and their household effects to destination free of charge, and helped them and their industries in the beginnings. A similar policy between the St. Maurice and Winnipeg should produce similar results. Pulpwood and lumber made in clearing farms might also be carried at more moderate rates to Canadian paper mills and new settlements, say, at rates not in excess of those charged upon coal from Nova Scotia mines. It might be well for the Government to establish an experimental farm on this railway in each of the forest provinces of Quebec and Ontario, and in each of the prairie provinces of Manitoba, Saskatchewan and Alberta, and perhaps one in the Bulkeley Valley near Prince Rupert. These farms would form the nuclei which would attract settlement on a larger scale.

The Canadian Pacific and Canadian National Railways have done wonders for the development of Canada, and they have tried to meet the wants of the people in the reduction of rates in a generous manner, as the comparison of rates with American western roads has shown. It is not fair to ask of them further sacrifices, in the present position of operating expenses in which 60 per cent of the gross earnings of the Government line have to be expended on wages. So I would suggest that if the programme I have outlined should be adopted, the railways should, as compensation for the reduction of the rates on export wheat and flour, not be disturbed in their present tariffs west of Fort William on any other goods for the period of ten years, except, perhaps, in the rates on farm implements, or any other rates that the Railway Commission may deem unreasonable. And, furthermore, that if at the end of each year, they can prove that the reduced rates above named have not covered the cost plus twenty per cent, the Government shall refund the difference, as its contribution towards the work of colonization. I would also suggest that the Government and the railways should hold a conference with the railway employees, to see if they will contribute towards this good work by making some concessions which will prevent the paylists from absorbing so great a percentage of the earnings.

The establishment of flour mills in the prairie provinces should also be encouraged, as giving employment, and leading to Canada taking possession of export markets, which the higher cost of American flour, owing to dearer wheat, will put in our way. Government returns show that last year this industry, which employs 7,000 people, used 84 million bushels of wheat, produced 19 million barrels of flour and exported 11 million barrels.

The Canadian National and the Canadian Pacific Railways should place, at the service of this route, from Quebec and Montreal, in summer, and from Halifax and St. John in winter, all their freight steamers, at the same rates of freight as are current in New York. The Grand Trunk and the Grand Trunk Pacific, when they undertook the construction of the last-named railway, in 1904, entered into a formal contract with the Government of Canada, that they would furnish ample steamship tonnage at Canadian seaports to handle all the traffic that the railways could bring to those ports, and bound themselves to use all their influence to have the export trade directed to Canadian seaports. The Government of Canada, in taking away the Transcontinental and the Grand Trunk Pacific from its original lessees and owners, thereby assumed all their obligations. The action of the officials of the Government Railway in making a tariff upon export grain to Montreal and Quebec, at prohibitory rates, as Mr. Dalrymple's evidence admits, and thereby diverting it to the New York route, means a distinct breach of faith, and would seem to be a contradiction of the intention of Parliament, as expressed in the Statute of 1904, and should be immediately remedied.

If the above programme can be carried out, and if the Government will put 10 million bushels storage at each of the ports of Quebec, Halifax and St. John, and 14 millions (now building) at Montreal, and arrange for marine insurance at New York rates, as recommended by the Senate, I feel confident

that Canadian seaports will get a large share of this trade, the western farmer will be put in a position to live, and the settlement of the country will progress rapidly.

I do not believe that this plan will be injurious, in any way, to the trade on the lakes, which is bound to get its full share, nor to the capital invested in elevators at Fort William, Georgian Bay and Port Colborne, nor to the splendid organization which has heretofore directed so well the movement of this vast trade.

If the production of wheat goes on on anything like the scale of the last twenty years, there will be plenty for everybody.

It has been stated that Buffalo is a strategic point for the storage of grain prior to its export. But if we can formulate a policy which will bring ocean tonnage to our seaports, why not store at these seaports? In any case, Quebec and Montreal are only 300 miles from Portland, whilst Buffalo is 400 miles from New York.

I cannot close without expressing my admiration for the wonderful machinery which has been created for the handling of this traffic, working smoothly, without friction or dispute. At every railway station where grain is grown to any extent, there are two, three—even up to six or seven—country elevators belonging to different owners, competing for the farmers' grain. If he does not sell, he has the option to store, or to send it to the large terminal elevators at Fort William, where there is similar competition. So he should get the best price the market offers, and is protected by Government inspection as to the quality of his grain, and by a competent, highly trained staff of government officials.

Yours very truly,

J. G. SCOTT.

P.S.—A very active colonization policy, such as settled the Lake St. John country so rapidly, is essential to giving this new country a density of population sufficient to maintain the moderate rates of freight outlined above. In any policy which the Government may adopt to this end, it is to be hoped that efforts will be made to stop the emigration of farmers' sons from the Province of Quebec to the United States, and to induce them to take up land, not only in the wooded districts, but in the prairie country which was first discovered by their forefathers. They are the best of settlers and far better suited than people from Europe for this work. I know them, because I worked with them in colonization for twenty years.

J. G. SCOTT.

SUPPLEMENTARY

OTTAWA, January 7, 1925.

Since the above was written, the crop of 1924 has been gathered, and a material alteration has taken place in its value, the price of wheat, owing to short supply, being now about \$1.80 per bushel at Fort William. But, unfortunately, the farmer will not benefit materially, because the quantity raised per acre is little more than half of what it was in 1923. So that the situation remains at about what it was, and the conclusions arrived at in this memorandum do not require any modification.

The figures are also now available with regard to the export of Canadian wheat for the crop year ending 31st August, 1924, and are as follows:—

	bushels
To United States for consumption.....	21,320,242
To United States seaports for export.....	141,079 337
Exported from Montreal and Quebec.....	63,568,444
Exported from St. John.....	9,412,533
Exported from Vancouver.....	53,809,505
Total.....	<u>289,190,061</u>

These figures show that the eastern coast exports continue, as before, 66 per cent via United States seaports and 34 per cent via Montreal, Quebec and St. John.

J. G. SCOTT,

*Commissioner,
Royal Grain Inquiry Commission.*



